JULY 20, 1935

AUG -1 1935

THE LANCET

Offices: 7, ADAM STREET, ADELPHI, W.C.2.
Telegrams: LANCET, RAND, LONDON. Telephone: TEMPLE BAR 7228 and 7229.

No. III. OF VOL. II., 1935. LONDON, SATURDAY, JULY 20, 1935. Pp. 120—Price 1s.
No. 5838. VOL. CCXXIX. Founded 1823. PUBLISHED WEEKLY. Registered as a Newspaper. Annual Subscription: Inland £2 2s. Abroad £2 10s.

INJURY AND INCAPACITY
WITH SPECIAL REFERENCE TO INDUSTRIAL INSURANCE.
By H. ERNEST GRIFFITHS, M.S. (Lond.), F.R.C.S.
Surgeon to the Albert Dock Hospital.
Size 6¼ + 9¼. Pp. viii + 276. Price 12s. 6d.
A guide to prognosis and to the assessment of incapacity following accidents in industry.
Baillière, Tindall & Cox, 7 & 8, Henrietta-street, London, W.C.2.

SECOND EDITION. JUST PUBLISHED.
THE RISE OF MODERN PHYSICS.
By Prof. HENRY CREW, PH.D.
An account of the origin and evolution of the modern study of physics, and of the workers who have brought it to its present state of perfection.
Pp. xx + 434. Price 18s.
Baillière, Tindall & Cox, 7 & 8, Henrietta-street, London, W.C.2.

FRACTURES.
By MEURICE SINCLAIR, C.M.G., M.B., CH.B. (EDIN.).
With an Introduction by Sir ROBERT JONES, Bt., F.R.C.S.
Pp. 550. 337 X ray photographs, photographs and diagrams. 24s. net.
Constable & Co., Ltd., London.

DISEASES OF THE THYROID GLAND.
WITH SPECIAL REFERENCE TO THYROTOXICOSIS.
By CECIL A. JOLL, M.S., B.Sc., F.R.C.S. (Eng.).
Crown 4to. Fully Illustrated. £3 3s. net.
"No praise is too high for the author of this great book. It must be considered as the standard work on thyroid disease. Its pages summarise all that is known of this most interesting subject at the present day."—WEST LONDON MEDICAL JOURNAL.
William Heinemann (Medical Books) Ltd., 99, Great Russell-street, London, W.C.1.

OESOPHAGEAL OBSTRUCTION;
ITS PATHOLOGY, DIAGNOSIS AND TREATMENT
(including four chapters on Cancer of the Œsophagus).
By A. LAWRENCE ABEL, M.S. Lond., F.R.C.S. Eng.,
Assistant Surgeon to the Cancer Hospital, &c.
Pp. 245. 132 Illustrations. 2 Col. Plates. 30s. net.
"Masterful and complete . . . Cannot be too highly praised."
—SURG. GYN. AND OBSTET. JOUR.
Oxford University Press, Amen House, London, E.C.4.

SELECTED WRITINGS OF
JOHN HUGHLINGS JACKSON,
M.D., F.R.C.P., F.R.S.
Two Volumes.
I.—EPILEPSY AND EPILEPTIFORM CONVULSIONS.
II.—EVOLUTION AND DISSOLUTION OF THE NERVOUS SYSTEM: SPEECH: VARIOUS PAPERS: ADDRESSES AND LECTURES.
Edited by JAMES TAYLOR, M.D., F.R.C.P.
With the advice and assistance of GORDON HOLMES, M.D., F.R.C.P., and F. M. R. WALSHE, M.D., F.R.C.P.
Over 500 pages in each vol. Price 25s. net each; postage extra (inland 9d., abroad 10d.).
Hodder & Stoughton, Ltd., 20, Warwick-square, E.C.4.

By EDWIN L. HOPEWELL-ASH, M.D.
MANIPULATIVE METHODS IN THE TREATMENT OF FUNCTIONAL DISEASE.
OUTLINE OF TECHNIQUE—SUITABLE CASES—RESULTS.
John Bale, Sons, & Danielsson, Ltd. Price 3s.

THE TREATMENT OF FRACTURES
IN THE NEW
SURGICAL CLINICS OF NORTH AMERICA
See Saunders' Advertisement on Page 5

JUST PUBLISHED
THE RHEUMATIC DISEASES
THEIR RECOGNITION AND TREATMENT
By
FRANCIS BACH, M.A., M.D. Oxford
Chief Assistant at St. Bartholomew's Hospital, and the British Red Cross Society's Clinic for Rheumatism
Pp. 436. 12 Plates and 26 Text-figures. Price 12s. 6d. net.
HIGHLY COMMENDED.

DISEASES OF THE SKIN.
By S. ERNEST DORE, M.A., M.D., F.R.C.P. Lond., and JOHN L. FRANKLIN, M.A., M.D., M.R.C.P.
Crown 8vo, 420 pages, with 46 Half-Tone Plates. 10s. 6d. net.
"The authors have succeeded in presenting an almost complete review, in an astonishingly small compass, of the three hundred or so disorders by which the skin may be affected."—PRACTITIONER.
Cassell & Co., Ltd., La Belle Sauvage, London, E.C.4.

HIGH BLOOD PRESSURE.
THIRD EDITION. NOW READY. REVISED AND ENLARGED.
267 pages, with 48 illustrations. 15s.; postage 9d.
LOW BLOOD PRESSURE.
257 pages, with 15 illustrations. 15s.; postage 9d.
By J. F. HALLS DALLY, M.A., M.D. Cantab., M.R.C.P.
Wm. Heinemann (Medical Books) Ltd., 99, Great Russell-street, London, W.C.1.

FOURTH EDITION. Completely revised. 10s. 6d. net.
TREATMENT OF DISEASES OF THE SKIN.
By KNOWSLEY SIBLEY, M.A., M.D., B.Ch. (Camb.).
London: Edward Arnold & Co., 41 and 43, Maddox-street, W.1.

FOURTH EDITION, Revised and Enlarged, containing New Methods and Data.
CONTRACEPTION (Birth Control)
ITS THEORY, HISTORY AND PRACTICE.
By MARIE CARMICHAEL STOPES, D.Sc.,
Fellow of University College, London, &c.
520 pp., 10 plates. 15s. net. Postage 9d.
Putnam, 24, Bedford-street, London, W.C.2.

JOHN BALE, SONS & DANIELSSON, LTD.

SCHISTOSOMIASIS (BILHARZIASIS)
By D. RAMESES GIRGES. With Foreword by ERNEST CARROLL FAUST, Professor of Parasitology, Dept. of Tropical Medicine, Tulane University of Louisiana, New Orleans. Post free; inland 25s. 9d., abroad 26s. 6d.
"Of great biological and clinical interest."—BRIT. MED. JOUR.

DOCTORS IN ELIZABETHAN DRAMA.
By MACLEOD YEARSLEY, F.R.C.S. Post free 7s. 10d.
"Has virtues of conciseness and apt quotation."—LANCET.

ALLERGY IN RELATION TO LYMPHADENOMA.
By G. P. CHANDLER, M.D. (Camb.), M.R.C.P. Post free, 11s.
"A careful bit of work and well worthy of publication in monographic form."—JOURNAL OF PATHOLOGY.

WILHELM CONRAD RONTGEN and the Early History of the X-rays. By OTTO GLASSER. Illustrated. 32s. 6d. net; postage, inland 9d., abroad 1s. 6d.
"This volume has interest for every worker, whether on the medical or physical side of radiology."—LANCET.

GETTING QUALIFIED. By DAVID SCOTT, M.R.C.S., L.R.C.P. Post free 8s. A mine of information and good things.
"A most interesting book which all should read. It throws many a sidelight on medical study and practice."—MEDICAL WORLD.

MANUSCRIPTA MEDICA. By WARREN R. DAWSON, F.R.S.E., F.R.S.L., F.S.A. Scot. A Descriptive Catalogue of the Manuscripts of the Library of the Medical Society of London. Post free 15s. 9d.

ELEMENTARY COURSE OF TROPICAL HYGIENE.
2nd Edition. Part II. Revised and brought up to date. By M. J. BLACKLOCK, M.B., B.Sc. Post free 2s. 9d.

ARTIFICIAL CRANIAL DEFORMATION: A Contribution to the Study of Ethnic Mutilations. By Dr. E. J. DINGWALL. 55 Full Page Plates. 90 Illus. 5 Maps. Post free £3 12s.
"Dr. Dingwall has brought together in this well illustrated volume the materials for the consideration of one of the strangest customs ever invented by man."—LANCET.

83-91 GREAT TITCHFIELD ST., LONDON, W.1

Dyspepsia after Tea!

Here is one of the many hundreds of Medical testimonials as to the value in Dyspepsia of "**Ty.phoo**" tea, with its rich mild "leaf-edge" preponderance.

"Having suffered from Dyspepsia I find your 'Ty.phoo' tea suits me better than any other brands."

A large free sample of "Ty.phoo" tea will be posted to any practitioner who has not tried it.
(This offer applies only to the British Isles).

Over 17,000 Doctors are direct purchasers of this tea from us.
Sumner's **"Ty.phoo"** Tea, Ltd.,
Medical Dept. L., Birmingham, 5.

LESLIES ZŌPLA STRAPPING
(Zinc Oxide Plaster)

Powerful grip—no slipping

Thoroughly pliable

Consistently good

Strong White and Flesh Cloths, White Felt, etc. Samples on request

ZŌPLA—BAND
(Elastic Plaster Bandage)

Excellent for varicose veins, ulcers, sprains, etc., and where an elastic cloth is desirable

All widths from 1 inch

Cream and Flesh colour

Manufactured by LESLIES LTD., Higham Hill Road, Walthamstow, London, E.17
Telephone: LARkswood 1342

Oral Therapy of gonorrhœa in children

OESTRIN THERAPY OF VULVO VAGINITIS

"The main features of the treatment are: (1) that it is shorter than other methods; (2) it is easy of application as the drug can be given by mouth; and (3) it quickly diminishes the discharge and thereby reduces the infectivity of the patient and the risk of spreading the disease."

Lancet, March 16, 1935, pp. 604–6.

1,000 int. units
4 a day
100 for 15/-

MENFORMON TABLETS
ORGANON

Samples and literature gladly sent on request.

ORGANON LABORATORIES
Standardised Biological Products
1 GORDON SQUARE, LONDON, W.C.1
Telephone: Museum 2857 *Telegrams: Menformon, Westcent, London*

Agents for Australia:—F. H. Faulding & Co. Ltd.

JULY 20, 1935

THE LANCET

A JOURNAL OF BRITISH AND FOREIGN MEDICINE, SURGERY, OBSTETRICS, PHYSIOLOGY, CHEMISTRY, PHARMACOLOGY, PUBLIC HEALTH, AND NEWS

No. 5838 LONDON, SATURDAY, JULY 20, 1935 CCXXIX

CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT

ADDRESSES AND ORIGINAL ARTICLES

Chronic Duodenal Ileus in Infancy and Childhood. By REGINALD MILLER, F.R.C.P., and H. COURTNEY GAGE, M.R.C.S. — (*Illustrations on Plate*) 115
Cortical Carcinoma of the Suprarenal with Cushing's Basophil Pituitary Syndrome. By DOROTHY C. HARE, M.R.C.P., JOAN M. ROSS, M.D., and A. C. CROOKE, M.D.,— (*Illustrated*) 118
Ventriculography by Opaque Injection. By E. W. TWINING, M.R.C.S., and G. F. ROWBOTHAM, F.R.C.S.— (*Illustrations on Plate*) .. 122
Virus Bodies in the Pericardial Fluid of Rheumatic Fever. By ALFRED C. COLES, M.R.C.P., F.R.S. Edin.— *Illustration on Plate*) 125
Pyelitis, its Significance and Treatment. By Prof. ARTHUR ELLIS, F.R.C.P. — (*Illustrations on Plate*) 127
A Director for the Insertion of the Smith-Petersen Nail in Collum Femoris Fractures. By ERIC I. LLOYD, F.R.C.S.— (*Illustrated*) 129

CLINICAL AND LABORATORY NOTES

An Unusual Infection of the Antrum, of Dental Origin. By E. C. N. STRONG, F.R.C.S., L.D.S., and I. B. BARCLAY, M.R.C.S. — (*Illustrations on Plate*) .. 131
Fatal Poisoning Caused by Morphine in a Proprietary Remedy. By ARNOLD RENSHAW, M.D. 132
A Case of Leopard Bite. By JAMES WALKER, M.B., D.P.H.—(*Illustrated*) ... 133

MEDICAL SOCIETIES

British Social Hygiene Council: Imperial Congress 134

REVIEWS AND NOTICES OF BOOKS

Diseases of the Endocrine Glands. By Hermann Zondek, M.D. 135
Principles and Practice of Urology. By Prof. Frank Hinman, M.D. 136
Krebs und Vererbung. By Prof. Dr. Hans R. Schinz and Dr. Franz Buschke 136
A Manual of the Practice of Medicine. By Prof. A. A. Stevens, M.D..... 136
Health, and a Changing Civilisation. By E. Obermer, M.D. 137
Insomnia and other Disturbances of Sleep. By E. Miller, L.R.C.P. 137
Physical Chemistry for Students of Biology and Medicine. By Prof. David Ingersoll Hitchcock, Ph.D. 137
Medical Case-taking and Diagnosis. By Prof. A. J. Kohiyar, M.R.C.P..... 137
Commonsense Dentistry (a National Necessity). By E. Samson, L.D.S., F.C.S. 137

LEADING ARTICLES

ARTIFICIAL RESPIRATION ON THE SPOT 139
URINARY INFECTION 140
HERD IMMUNITY 141

ANNOTATIONS

Dufferin Fund Jubilee Report 142
Vitamin Standards 143
Activities at the College of Surgeons 143
Statistics of Nocturnal Enuresis 143
Injuries to the Face and Jaw in Warfare 144
A Rapid Survey of Biological Problems 144
The Commonwealth Fund. 145
Air Raids and Poison Gas. 145
The Employment of Married Medical Women 146
Juvenile Rheumatism in India 146

THE SERVICES

Royal Naval Medical Service.— Royal Air Force.—I.M.S. 148

PROGNOSIS

LXI.—Prognosis in Epidemic Encephalitis: Acute and Chronic. Sir ARTHUR HALL, F.R.C.P. 147

SPECIAL ARTICLES

The Best Method of Manual Artificial Respiration and How to Apply It. By C. J. MIJNLIEFF, M.D.— (*Illustrated*) 149
Nat. Con. on Mat. and Child Welfare—(*Concluded*) .. 152
Beit Memorial Trust..... 153
United States of America 154
Scotland 154

CORRESPONDENCE

Treatment of Tuberculosis of the Lungs by Means of Bilateral Collapse: Unexplained Death (Mr. H. Batty Shaw, F.R.C.S.). 155
The Future of Pharmacy (Dr. F. W. Crossley-Holland) 155
Prognosis of Simple Moles and Melanotic Sarcoma (Dr. E. S. Horgan) 156
Gold Treatment of Asthma (Prof. G. P. G. Sobhy).. 156
Gold Treatment of Tuberculosis (Dr. B. A. Peters and Dr. C. Short) 157
Gold Treatment of Rheumatoid Arthritis (Dr. Gerald Slot, Dr. P. M. Deville) 157
An Epidemic of Herpes (Dr. John C. Bridge)... 158
Headaches (Dr. Joseph Geoghegan) 158
Bleeding of Transfusion Donors (Dr. J. W. Shackle) 158
"Ultra Short Waves" (Sir Leonard Hill, F.R.S.)... 158
The Incidence of Proctitis in Gonorrhœa of Females (Dr. Morna Rawlins)... 158
The Unhappy Colon (Dr. S. Henning Belfrage)... 159

NEW INVENTIONS

Endotracheal Insufflation of the New-born. By Mr. G. F. GIBBERD, F.R.C.S., and Mr. J. B. BLAIKLEY, F.R.C.S.— (*Illustrated*) 138

PUBLIC HEALTH

Another Report on Maternal Mortality and Morbidity..... 159
Infectious Disease in England and Wales ... 161

PANEL AND CONTRACT PRACTICE

Health Insurance in British Columbia 161

OBITUARY

Alfred Henry Spurrier, L.R.C.P., C.M.G., O.B.E. 163
Horace Manders, F.R.C.S. 163
David Samuel, M.R.C.S. .. 163

PARLIAMENT

Notes on Current Topics: Maternity Benefit Concession 164
House of Commons: Meals for Necessitous Children. —Hospitals and Lotteries Act 165

MEDICAL NEWS

University of Cambridge, London, and Aberdeen . 167
Royal Coll. Surg. of Eng... 167
University of St. Andrews, Dublin, Sheffield, and Durham 168
National Univ. of Ireland 168
Queen's University, Belfast 168
Welsh Nat. School Med. .. 169
St. Mary's Hosp. Med. Sch. 169
University of Manchester.. 169
Leverhulme Fellowships .. 169
International Congress on Life Assurance Medicine 169
London Hospital 169
University of Oxford..... 170
General Board of Control for Scotland 170
Nav. Med. Compass. Fund 170
Medical Society of Individual Psychology 170
Imp. Social Hyg. Congress 170

NOTES, COMMENTS, AND ABSTRACTS

Dimensions of Sick Wards. 172
Big-game Photography... 172
Some Methods of Health Education 172
Women Over Forty 172
The "Albatross" 172
Sun-bathing 172

Appointments— Vacancies 170
Births, Marriages, Deaths 171
Medical Diary 171

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY LIMITED

(FOUNDED 1892)

President: Sir CUTHBERT S. WALLACE, K.C.M.G., C.B., F.R.C.S.

Trustees for the Reserve Fund:
Rt. Hon. LORD DAWSON, P.C., G.C.V.O., K.C.B., M.D., F.R.C.P.
Sir SQUIRE SPRIGGE, M.D., F.R.C.P., F.R.C.S. Sir NORMAN G. BENNETT, M.A., M.B., B.Ch., L.D.S.

The Society was founded for the following purposes: To protect, support, and safeguard the character and interests of legally qualified Medical and Dental Practitioners; to advise and assist Members of the Society in matters affecting their professional character and interests; and to indemnify them in respect to actions, etc., undertaken on their behalf.

The Society is insured with Lloyd's Underwriters to an unlimited extent in respect of all adverse costs and damages awarded against Members in any action which the Society undertakes on their behalf.

Annual Subscription: £1 Entrance Fee: 10s. Assets exceed £70,000.
No entrance fee to those joining within 12 months of registration.

Full particulars and forms of application for membership from the Secretary, Victory House, Leicester Square, W.C.2.
Telephone: GERRARD 4814

FOREIGN BOOKS
SPECIAL DEPARTMENT

H. K. LEWIS & CO. LTD.
136 GOWER STREET
LONDON, W.C.1

PROMPT ATTENTION TO ORDERS OR INQUIRIES

TELEPHONE: MUSEUM 7756

STAMMERING, SPEECH DEFECTS

BEHNKE METHOD. Estab. 1880. CASES, non-resident, treated at 39, Earl's Court-square, S.W.5, and, in residence, in the Summer Holidays at Miss Behnke's house on the Chilterns.

"Pre-eminent success in the education and treatment of stammering and other speech defects."—*The Times.*

"Thoroughly physiological principles."—*The Lancet.*

"The method is scientifically correct and perfectly effective."—*Guy's Hospital Gazette.*

"STAMMERING, CLEFT PALATE, SPEECH LISPING." 3s. 9d. of Miss BEHNKE, 39, Earl's Court-square, S.W.5.

"GAMGEE TISSUE"

Sole Proprietors and Manufacturers
ROBINSON & SONS, Limited
Chesterfield

Just Published. Sixth Edition. Fully Revised. 175 *explanatory Diagrams.*
Crown 8vo, 452 pp. 15s. *net. Postage 6d.*

SYNOPSIS OF
OBSTETRICS AND GYNÆCOLOGY
By ALECK W. BOURNE
M.A., M.B., B.Ch. (Camb.), F.R.C.S. (Eng.).

"The reader will not fail to appreciate the clear, concise, and complete manner in which the subjects are dealt with. The book is to be recommended both to the senior student and to the general practitioner."—BRITISH MEDICAL JOURNAL.

"Should prove very useful. The book is a trust worthy epitome of the subject and forms a reliable guide to the student."—LANCET.

Just Published. 2nd Edition. Revised and Enlarged. Crown 8vo, 664 pp.
With 639 Illustrations. 17s. 6d. *Postage 9d.*

A SYNOPSIS OF
SURGICAL ANATOMY
By ALEXANDER LEE McGREGOR
M.Ch. (Edin.), F.R.C.S. (Eng.).
Lecturer on Surgical Anatomy, University of the Witwatersrand; Assistant Surgeon, Transvaal Memorial Hospital for Children.
With a Foreword by
Sir HAROLD J. STILES, K.B.E., F.R.C.S. (Edin.).

"A work which, besides being one of outstanding merit, is quite the best of its kind we have yet seen."—BRITISH MEDICAL JOURNAL.

"We have read through the work with no little profit and believe it will be found very useful."—LANCET.

Bristol: JOHN WRIGHT & SONS LTD. *Illustrated Catalogue free.* London: SIMPKIN MARSHALL LTD.

TRUSSES

from a house of 30 years' standing

Effective Truss fitting necessitates long experience, anatomical as well as mechanical knowledge and dexterity in manipulation.

Our Trusses are as excellent as all our experience can possibly make them. You may send your patients to us with assurance of scientific treatment, correct attention to details, intelligent interpretation of your instructions and strict compliance with ethical rules.

Many practitioners already know and value the "Curtis Book of Appliances." May we send you a copy of the latest issue now in preparation?

H. E. CURTIS & SON LTD.
7a, Mandeville Place, Wigmore Street
LONDON - W.1
Telephone: Welbeck 2921

ADDRESSES AND ORIGINAL ARTICLES

CHRONIC DUODENAL ILEUS IN INFANCY AND CHILDHOOD

BY REGINALD MILLER, M.D., F.R.C.P. Lond.
PHYSICIAN TO ST. MARY'S AND PADDINGTON GREEN CHILDREN'S HOSPITALS, LONDON; AND

H. COURTNEY GAGE, M.R.C.S. Eng.
RADIOLOGIST TO ST. MARY'S HOSPITAL

(WITH ILLUSTRATIONS ON PLATE)

DURING the last six years we have been interested in the occurrence of chronic duodenal ileus from arterio-mesenteric compression as a cause of symptoms in early life, and we have published in a specialist journal [1 2 3] details of some of our cases with the evidence—radiographic, operative, and post mortem—on which the diagnosis was based. It is proposed here to give an account of the conclusions which we have sought to establish.

In 1929, when we encountered our first case at an operation on a young child, perusal of the literature brought out the following points of interest in connexion with chronic duodenal ileus in early life:—

(1) Chronic duodenal ileus, established as a comparatively rare condition in adults, is regarded as having two causative factors: first, a congenital anatomical factor, the compression of the duodenum by the root of the mesentery and (usually) the superior mesenteric artery; and secondly, an accessory factor of visceral distension or ptosis whereby the pressure on the duodenum is increased. The congenital factor has had to be assumed; otherwise it would be difficult to understand why visceral distension or ptosis should not always produce duodenal obstruction.

(2) Surgeons investigating their cases of chronic duodenal ileus in adults have found that there is frequently a history of vomiting and dyspepsia in childhood, which symptoms tend to pass off in late childhood or adolescence, to reappear in later life. D. P. D. Wilkie [4] in 1927 laid stress on this interesting point which was confirmed by R. P. Rowlands [5] in 1933.

(3) Arterio-mesenteric compression has occasionally been recorded as a cause of symptoms in young children, and in 1930 we were able to collect from the literature 8 cases between the ages of nine days and four and a half years. In these vomiting of bile had been a conspicuous feature, and the duodenum had been greatly enlarged (megaduodenum), so much so that in some it was visible under the abdominal wall and appeared like "a second stomach." In these two particulars the reported cases differ from those we have met, though it is possible that the difference between the two groups is merely one of degree. In our cases, even in infancy, the vomiting of bile is a rarity, and the duodenum, although enlarged, cannot fairly be described as a gross megaduodenum.

(4) Apart from this group, mainly giving rise to symptoms in infancy, there are very few references to the occurrence of chronic duodenal ileus in early life. A few isolated cases have been reported, but in most details were lacking and in many there were associated malformations or pathological lesions. We collected these cases in 1930.[1]

PRESENT INVESTIGATIONS

In December, 1928, there came under our care a small boy nearly three years old, of such frailty that he weighed only 19½ lb. His symptoms dated from birth, and careful clinical and radiographic examination led us to conclude that there was some obstruction to the evacuation of the stomach—almost certainly not in the stomach itself—which came into play chiefly, if not only, when the stomach was distended. Operation in May, 1929, revealed clearly compression of the duodenum by the root of the mesentery. The clinical history and features of this case were so peculiar that with the clue provided by this operation we were able to recognise milder cases of the same type, and in 1930 we published 9 of them under the title of "gastromegaly and chronic duodenal ileus in children." The term "gastromegaly" was used partly to emphasise the enlargement of the stomach which is the most striking sign in these cases, and partly as a group name because, as only 2 had been verified by operation, we were not sure then that the cause of the obstruction was the same in all. Now that with further experience it seems that the syndrome we described is always due to the same cause, the term "gastromegaly" appears unnecessary although it has become known amongst pædiatric physicians.

In studying these cases in young children we noted that, although typically the most prominent symptom in the earliest weeks of life was refusal of food (congenital anorexia), in a few instances vomiting had developed so soon after birth as to give rise to a suspicion of hypertrophic pyloric stenosis. In May, 1931, we met our first neonatal case in a girl of five days of age. Here although we were able to prove the presence of an incomplete duodenal obstruction, so severe was the vomiting that we failed to consider the possibility of arterio-mesenteric compression, which was revealed at autopsy on the eighth day. Since then, however, we have been able to recognise two other neonatal cases which have progressed well under appropriate medical treatment.

SYMPTOMS, SIGNS, AND RADIOGRAPHY

Symptoms.—As has already been mentioned the gastric symptoms are produced by two factors: the congenital anatomical factor of compression which persists in some degree until at least later childhood; and the accessory factor of gastric distension. The influence of the accessory factor must not be underestimated; it is the cause of the more urgent obstructive symptoms, even in the neonatal cases. Where gastric distension is avoided the stomach seems to become, as it were, compensated by hypertrophy and able to overcome the persistent congenital compression of the duodenum. It is important to realise that in early life gastric distension in these cases depends almost entirely on the amount of food taken, though the degree of gastric stasis no doubt plays its part; and this is the explanation of the fact that the earliest symptoms may consist either of refusal of food or of obstructive vomiting.

Symptoms can usually be traced back to the time of birth, but as in other congenital conditions there are exceptions to this rule. In the majority of cases the chief early symptom is complete lack of appetite; the child does not want its feeds, takes very slowly, and never finishes its bottles. Occasional small vomits may occur, but for the most part the underfeeding keeps the vomiting in abeyance. Progress is naturally slow, but the baby is looked upon as peculiar rather than ill, and no suspicion of any form of obstruction is aroused. At about the age of eighteen months, when the child is taking a mixed solid and

fluid diet and can be pressed to take more than it wants, bouts of vomiting begin. In a smaller group of cases vomiting is an early symptom. We have already mentioned that in some of our cases seen at a later age there was a history of suspected hypertrophic pyloric stenosis in the early weeks of life, but in 2 out of the 3 neonatal cases which we have ourselves seen the vomiting was so severe and so obviously due to obstruction that a suspicion of congenital duodenal atresia was raised.

In either of these two groups the vomiting of obvious bile is exceptional. Even in the neonatal cases this is true, and only gastric lavage showed traces of bile in our cases.

Seen after the age of infancy—and most of our cases came under observation between the ages of two and eight years—these children are frail and underweight, but not notably stunted in height. It is rather characteristic that their complexions are pink and clear, showing neither the muddy skin of the intestinal dyspeptic nor the pallor of cœliac disease. Their chief symptoms are persistent lack of appetite and periodic attacks of vomiting. The anorexia is severe and is little influenced by purges, treats, or holidays. The frequency of the vomiting attacks depends greatly on what amount of food the child is made to take. The vomit shows accumulated food and mucus, and the attack is accompanied often by high fever and followed by diarrhœa with sometimes an excess of sodden mucus in the stools. A further rather characteristic symptom is hiccup, though its presence is seldom referred to by parents spontaneously. It is produced by a moderate degree of gastric distension and may be a warning of an attack of vomiting. Its disappearance under treatment is one of the earliest signs of improvement. The tongue is habitually coated, and the breath tends to be offensive.

As regards the bowels, constipation is not as prominent a symptom as might be expected, and if the bowels are disordered it is usually towards diarrhœa. Probably the persistent chronic gastritis readily sets up an enteritis. In some instances, especially in the younger children, the stools may contain much thick, sodden, and bile-stained mucus, which probably originates in the stomach. An excess of fat may appear in the stools from time to time, and we have had fat analyses as high as 59 per cent. of the dried fæces. Although such steatorrhœa is exceptional and always transient, it is worth bearing in mind in connexion with both diagnosis and treatment. It is presumably due to some interference with the flow of bile behind the duodenal obstruction. In several of our cases an opaque meal showed the colon to be unduly voluminous.

In 2 of our cases the intestinal symptoms have been much more in evidence than the gastric, and the child has suffered more from diarrhœa than from vomiting.

As will be seen from this account of the symptoms, although the past history may be rather characteristic, the symptoms themselves do not point at all clearly to any form of organic obstruction.

Physical signs.—The most characteristic physical sign is the protuberance of the upper abdomen from the enlarged and hypertrophied stomach (gastromegaly). This is best seen when the child is lying down but is often obvious in the upright position. The outline of the stomach may be clearly visible, and after a meal or draught of soda water gastric peristalsis may be observed in a good light. On palpation the wall of the stomach may give the sensation of being thickened, and gastric splashing may be elicited at any time.

Radiographic examination by means of an opaque meal has many uses in cases of chronic duodenal ileus. In severe neonatal cases it serves to distinguish between complete and incomplete duodenal obstruction. In milder instances at any age, where the presence of any form of obstruction may be doubtful, it serves to establish it by demonstrating gastric hyperperistalsis combined with delayed emptying-time of the stomach. It fairly easily excludes the pylorus as the site of the obstruction and this of itself tends to incriminate the duodenum. With careful technique the duodenal cap may be seen to fill easily and be enlarged, and with perseverance stasis in the lower part of the duodenum may be caught, although this cannot be guaranteed at any single examination. With good fortune the wall of the stomach may be seen to be definitely hypertrophied.

In order to get the best results two points require attention. First, the volume of the opaque meal must be considerably greater than that normally used for the age of the child; otherwise the enlarged stomach will be imperfectly filled and even delayed emptying-time may be missed. Secondly, it is much easier to get good views of the duodenum if gross gastric dilatation has been relieved by previous treatment. In the neonatal cases the meal should be given directly after the stomach has been washed out. Oblique and lateral views should be used to study the duodenum.

If the opaque meal is given before treatment has been instituted a peculiar picture is often seen. The stomach is much enlarged and stretches across the abdomen obliquely, almost ovoid in shape and projecting so far to the right as to hide the pylorus and duodenal cap completely even in oblique views. Very little is seen in the way of peristalsis and only small quantities of the meal pass on into the jejunum. This picture, although very characteristic to those familiar with it, cannot be taken to prove the presence of duodenal obstruction. It is essential that the duodenal cap should be seen at some part of the examination in order to demonstrate a normal pyloric canal with no increase in the pyloro-duodenal gap. If the meal is repeated after treatment has restored something of the gastric tone, the stomach, although still greatly enlarged, is more normal in outline, and in oblique views the duodenal cap is seen to be well filled and enlarged. Stasis in the lower parts of the duodenum as it runs to the middle line may be seen, and gastric hyperperistalsis and stasis, the combination typical of obstruction to the evacuation of the contents of the stomach, will certainly be seen.

DIAGNOSIS AND TREATMENT

It will be convenient to discuss these subjects in the two groups of cases, neonatal and later, separately.

1. *Neonatal group.*—In the cases seen in the first few weeks of life the differential diagnosis depends on the severity of the obstruction symptoms, and this in turn seems to depend at least as much on the distension of the stomach as on the persistent compression of the duodenum with which the child is born. If obstructive vomiting is present from birth the case will simulate one of congenital duodenal stenosis or atresia; if it develops later it may be mistaken for one of hypertrophic pyloric stenosis, pylorospasm, or non-obstructive dyspepsia. Our 3 neonatal cases show these differences well; we give them in the order in which we met them.

Case 1.—Female; vomiting from birth; seen 5th day. Opaque meal showed large stomach passing only minute quantities of meal into small jejunum. Vomit showed much mucus but no obvious bile. Operation on 7th day: stomach large, duodenum large; cause of obstruction not

recognised. Autopsy on 8th day revealed arterio-mesenteric compression.

Case 2.—Female; vomiting from birth; seen 10th day. Stomach large; vomit projected, containing much mucus but no obvious bile. Immediate opaque meal showed dilated lower œsophagus, with large ovoid stomach emptying very little food into jejunum. In the hope of duodenal ileus operation was postponed and gastric lavage ordered. First lavage stopped all serious vomiting; first two washings showed traces of bile. On 16th day second opaque meal showed large stomach with improved tone and emptying-rate, and obvious duodenal stasis (Fig. I. on Plate). Progressed well. At 5 months (weight, 17½ lb.) visible gastric peristalsis still present. Third opaque meal showed stomach emptying well by hyperperistalsis, and duodenal stasis again seen. At 12 months reported progressing well.

Case 3.—Female; vomiting from birth slight, but severe after first three weeks; seen aged 8 weeks. Stomach large, peristalsis visible, vomit projected and containing much mucus but no obvious bile. Immediate opaque meal showed large ovoid stomach with stasis; barium vomited 10 hours after ingestion. Lavage showed traces of bile. At 11 weeks second opaque meal showed stomach emptying more quickly. At 12 weeks third opaque meal given immediately after lavage showed duodenal stasis. Progress satisfactory. At 6 months (weight, 12½ lb.) died of diphtheria. Autopsy confirmed presence of arterio-mesenteric compression.

In cases where severe vomiting dates from birth it may be difficult except by radiography to exclude duodenal obstruction from congenital malformation of the duodenum. In nearly all instances of this condition the obstruction is complete, and if the opaque meal discovers that the obstruction is incomplete we would urge that operation be postponed for one or two days to try the effect of gastric lavage. In our experience the commonest cause of a congenital incomplete duodenal obstruction is arterio-mesenteric compression. Partial obstruction by bands has been reported as a great rarity, but there is reason to think that in some instances such bands have been merely complicating arterio-mesenteric compression.

Where obstructive vomiting appears in the first few weeks of life rather than at birth, pyloric stenosis can be readily excluded. Pylorospasm is a painful condition and mucus is not vomited. Non-obstructive dyspepsia should be excluded by the enlargement of the stomach, the presence of visible gastric peristalsis, and the obstructive type of vomiting in which the vomit is copious, projected, and containing excess of mucus. The use of an opaque meal will confirm the presence of obstruction.

Three points in diagnosis require emphasis. First, the absence of obvious bile in the vomit does not preclude the presence of chronic duodenal ileus. Secondly, the persistent presence of an excess of mucus in the vomit in a chronic case of vomiting in a young infant signifies obstruction at the pylorus or in the duodenum. Thirdly, to get the best results in the use of an opaque meal the meal should be large and given directly after the stomach has been thoroughly washed out.

As regards treatment in the neonatal cases, gastric lavage seems quickly to stop serious vomiting by restoring the tone of the distended stomach and reducing its emptying-time. For this purpose a dilute solution of sodium bicarbonate probably deals better with the mucus in the stomach than normal saline and appears quite harmless. Lavage should be given at first every 12 hours, and when the washings become clear the intervals may be increased to 24, 36, and 48 hours. Lavage every two or three days will probably be needed for about three months. Distension of the stomach or large projected vomits are indications for more frequent lavage. The feeds should be spaced by the emptying-time of the stomach which is easily estimated in a small infant by passing a tube four hours after a meal. It should be borne in mind that under treatment the emptying-time of the stomach quickly improves.

2. *In late infancy or early childhood.*—The chief difficulty in diagnosis here is to recognise the possibility of the presence of any obstructive factor in the production of the symptoms. In only 2 of our cases had any investigations on these lines been made before they came under our care. On the other hand in several instances the mother had observed the peculiar protuberance of the child's upper abdomen and had tried to interest the doctor in this phenomenon. Apart from the fact that the history may date from birth or early infancy, the symptoms of lack of appetite and attacks of vomiting will hardly allow the child to escape the label of "acidosis." Perpetual hiccup, if inquired for, is suggestive. The diagnosis must be made on the clinical and radiographic signs; the enlarged protruding stomach, the visible peristalsis, and the persistent splashing suggest stasis and obstruction, which can be confirmed by the evidence given above afforded by the use of an opaque meal.

Treatment by medical measures is not unsatisfactory. In the younger children a certain degree of underfeeding may be unavoidable, but in the older children, who are already beginning to improve spontaneously, progress may be quite dramatically successful. Bearing in mind the importance of the volume of the feeds and the tendency to gastric stasis, it is essential to separate the fluids from the solid food as far as is possible and to give meals well spaced apart. A mixed diet, slightly low in fat, should be given mainly minced and as dry as may be palatable, and drinks should be given about three hours after meals. A mixture containing ½-drachm doses of glycothymolin (K. and O.) with rhubarb and soda is very useful in the early stages. Later, hydrochloric acid drinks may be allowed with meals. Paraffin should be avoided as an aperient. Massage and ultra-violet light may be a help.

Although the amount of exercise allowed may have to be curtailed to suit the subnormal intake of food, it is unwise to keep these children entirely in bed for any length of time. Exercise and fresh air help their digestions.

As regards the possibility of relieving the duodenal obstruction by operation, in the neonatal cases the risk is so extreme that medical treatment should at least be given a trial. In the older children it must be clearly understood that the enlargement of the duodenum is not sufficient to render the operation of duodeno-jejunostomy a possibility. Gastro-jejunostomy has not been found a success in adult cases of chronic duodenal ileus, and from our experience of 2 cases in children it is a disappointment in them also. The indications are to be satisfied with slow improvement rather than to resort to operation.

In the cases showing gross megaduodenum, which we have mentioned but have not met, duodeno-jejunostomy would presumably be the correct procedure.

PROGNOSIS AND COURSE.

In our 2 neonatal cases in which gastric lavage was employed improvement was dramatic. By treating the accessory factor of gastric distension satisfactory progress was made in spite of the persistence of the congenital obstruction. That all cases would show

similar improvement is perhaps doubtful, but in both our cases the obstruction appeared severe.

In cases seen at a later age treatment tends to stop the vomiting attacks, but in the younger children progress may be slow as it may be difficult to get a normal amount of food tolerated by the stomach. In children of eight or ten years old, in whom spontaneous improvement is to be expected, the effect of treatment may be a great success.

As Wilkie pointed out, there is a tendency towards spontaneous improvement in later childhood. This seems to take place at about the ages of eight or ten, and is probably due to the growth of the child. These children therefore, unlike most cases of cœliac disease, will be able to get to preparatory boarding schools. But we are by no means sure that all attain to complete freedom from symptoms. We suspect that some examples of severe gastric dilatation seen at puberty or in adolescence derive from congenital duodenal ileus, and we have had one such case under our care at the age of seventeen years who developed acute duodenal ileus following laparotomy fifteen years later. During childhood this post-operative complication seems practically unknown, and several of our patients have been through operations for the removal of tonsils or appendix without untoward results.

SUMMARY

Chronic duodenal ileus arising from congenital arterio-mesenteric compression of the duodenum is described as a cause of obstructive symptoms (*a*) in the newly born, and (*b*) in later infancy and early childhood; and its symptoms, signs, diagnosis, course, and treatment are discussed.

REFERENCES

1. Miller, R., and Gage, H. C.: Arch. Dis. Childhood, 1930, v., 83.
2. Miller and Gage: Ibid., 1932, vii., 65.
3. Miller and Gage: Ibid., 1935, x., 179.
4. Wilkie, D. P. D.: Amer. Jour. Med. Sci., 1927, clxxiii., 643.
5. Rowlands, R. P.: THE LANCET, 1933, i., 1107.

CORTICAL CARCINOMA OF THE SUPRARENAL

WITH CUSHING'S BASOPHIL PITUITARY SYNDROME

BY DOROTHY C. HARE, C.B.E., M.D., M.R.C.P.Lond., D.P.H.

PHYSICIAN TO THE ROYAL FREE HOSPITAL

JOAN M. ROSS, M.D. Lond.

READER IN PATHOLOGY, UNIVERSITY OF LONDON; AND

A. C. CROOKE, M.D. Camb.

GROCER'S RESEARCH SCHOLAR, LONDON HOSPITAL

THE clinical signs characteristic of the syndrome, conveniently called basophilism, which has been attributed to basophil adenoma of the pituitary are now well known. The close parallelism between this syndrome and that regarded as being produced by hyperfunction of the suprarenal cortex in adult women has recently been emphasised. The following is the report on a case of carcinoma of the suprarenal cortex in which special investigation of the pituitary (A. C. C.) has led to the observation of cytological changes hitherto unrecognised. Briefly, the chief clinical symptoms and signs were attacks of severe headache and vomiting, and persistent metrorrhagia followed by amenorrhœa. Hirsutism, of the male

FIG. 1.—The patient at age of 24 (1926).

type, with loss of scalp hair, greasy skin, an acneiform eruption, and striæ atrophicæ. These were associated with an adiposity of face, neck, shoulders, and trunk, and the limbs were slender. The patient developed kyphosis, and had polycythæmia and a raised blood pressure. At operation a malignant suprarenal tumour was removed and metastases were found at the post-mortem.

The patient, a machinist, was the tenth of a healthy family of twelve children. She was unmarried, the menses were regular, and she had had no previous illnesses of importance, and was in good health (Fig. 1) till November, 1931, when she missed two menstrual periods and began to be languid and sleepless. After an attack of tonsillitis in February, 1932, the menses became gradually prolonged, lasting up to six weeks, the daily loss not being at any time excessive; during 1933 the average duration was from seventeen to twenty-one days with irregular intervals; this was followed by amenorrhœa from February, 1934, interrupted by a slight menstrual discharge on May 24th and another in December, 1934; a slight brownish discharge was present at other times.

Changes in facial appearance were noticed early in 1933. The complexion, previously good, became spotty, the scalp hair broke off short, and the beard began to grow in April, 1933. The patient gained about half a stone in weight during 1933, and made a further gain of fourteen pounds during 1934. The maximum weight was 139 pounds. Headaches, to which she was always liable, increased in frequency, severity, and duration; vomiting was liable to occur on waking, or would follow the development of the

headache. She complained of a sense of weight and discomfort in the epigastrium, particularly on walking, and was liable to attacks of giddiness. The appetite was very good but not excessive. Thirst was increased and nocturnal frequency of micturition occurred. She noticed no change in her voice. No history of hæmorrhages or bruising was obtained, except a slight hæmoptysis in January, 1934. Mentality and efficiency were unimpaired. The patient continued at work until December, 1934, except during the period between Feb. 6th and May 31st, 1934, when she was an in-patient at the Royal Free Hospital. During this period she was shown at a meeting of the clinical section of the Royal Society of Medicine.[1] She was kept under continuous observation during 1934, and progressive changes in her appearance were noted; though there was little change in the symptoms, she felt progressively less able to carry on her work.

Her physical condition did not change much between February, 1934, and December, 1934 (see Figs. 2, 3, and 4), when she presented a masculine appearance. She was 5 ft. 2 in. in height, florid, with rounded shoulders, kyphosis of the upper thoracic and cervical spine, short thick neck and double chin, heavy trunk and prominent abdomen with relatively slender limbs, hands and feet. The face and extremities were congested, and the lips a deep colour. The skin over forehead and cheeks was thick and coarse with few creases; it was greasy, and there was an acneiform eruption on face and back. The scalp hair was dark, short and curly, and brittle, and made hardly any growth; there was a tendency to baldness in the centre and over the temples, which had been exposed to X ray treatment. She had a reddish beard, clipped about once a week, which grew thickly below the chin and less profusely in the whisker and moustache areas. A line of hair extended from pubes to umbilicus, sparse hairs were present round the nipples, and excess of fine hair on the front of the thighs, but no excess of hair elsewhere on the limbs. The

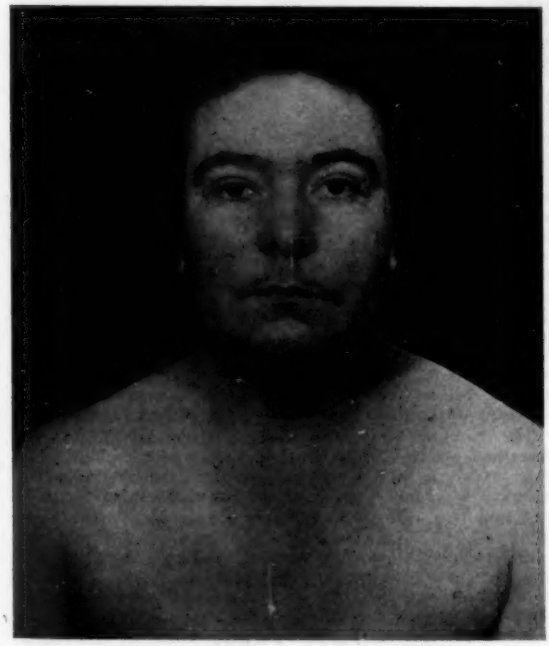


FIG 2.—The patient at age of 32 (March, 1934).

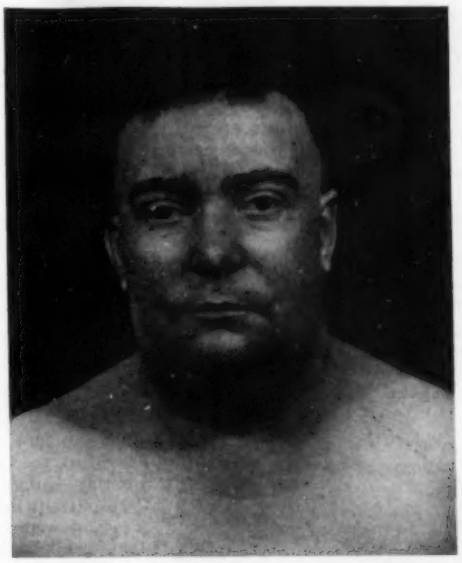


FIG. 3.—The patient in December, 1934.

adipose tissue was distributed chiefly on the lower part of the face, neck, shoulders and trunk; the abdomen was prominent. Two purple striæ atrophicæ were present at this date; none were seen in February, 1934. The breasts were small and of the obese male type.

The *heart* was slightly enlarged, the action forcible, and the sounds clear. The electrocardiogram showed a left-sided preponderance. The blood pressure was: systolic 205 mm., diastolic 140 mm. Hg on Dec. 29th. The abdominal wall was very thick and prominent, and the liver, spleen, and kidneys were not palpable; no tumour could be felt. The external genitalia were normal except for a slight enlargement of the clitoris. The cervix was small and soft and the uterus could not be defined. In lungs, urinary, and central nervous systems, nothing abnormal was found. The fundi were normal and the fields of vision and blind spot also normal.

Special investigations.—In February and March, 1934, the case was studied in detail. An X ray of the pituitary fossa showed it to be rather smaller than normal, the antero-posterior diameter being 11 mm. The outlines of the kidney (intravenous pyelogram) appeared normal and a skiagram of long bones, with control, showed no lack of Ca salts.

The Wassermann and Kahn tests were negative. Examination of urine gave a normal urea-concentration

TABLE I.—*Blood Counts*

Date in 1934.	Hb %.	R.B.C.	C.I.	W.B.C.
Feb. 13th	126	7,620,000	0·8	16,000
April 27th	102	5,780,000	0·9	9,400
Sept. 21st	122	6,770,000	0·91	21,500
Oct. 19th	116	4,660,000	1·23	14,400
Dec. 4th	114	5,720,000	1·0	11,550
,, 14th	Platelets 8 per cent. or 441,000 per c.mm.			

Between February and April 5 X ray treatments given to the pituitary region. From the end of September phenylhydrazine grs. 1·5 was given twice weekly, total grs. 12

Blood Analysis. Results in mg. per 100 c.cm. Blood

Urea.	N.P.N.	Urea/ N.P.N.	K.	Phosphatase units.	Ca.	Cholesterol.
38	37·7	38·3	2·32	0·148	10·9	161·3

test; the urine was free from albumin, casts, sugar. A trace only of prolan was found, not more than in normal urine, male or female.

The results of the investigation of the carbohydrate metabolism during 1934 are shown in the accompanying Chart (Fig. 5). Sugar was present in the urine only in traces 1–2 hours after 100 g. glucose.

December, 1934: Blood calcium 9·8 mg., cholesterol 176·3 mg.

This patient was included in a series of "virile women" investigated by Levy Simpson, de Fremery, and A. Macbeth, whose results are to be published in detail. Their preliminary report states that her urine "contained an excess of 'male' comb-growth hormone (more than 400 units per litre and per diem compared with the normal of less than 50); high values for œstrin (greater than 600 units per litre), but no excess of gonadotropic hormone."

Laparotomy was performed by Mr. C. A. Joll on Dec. 10th, 1934, for exploration of the suprarenals, and the left was found to be greatly enlarged. The patient made a good recovery from this operation, and on Dec. 31st, 1934, a second operation was performed, and the tumour was removed by the posterior route. This involved resection of the 11th and 12th ribs and opening of the pleural cavity.

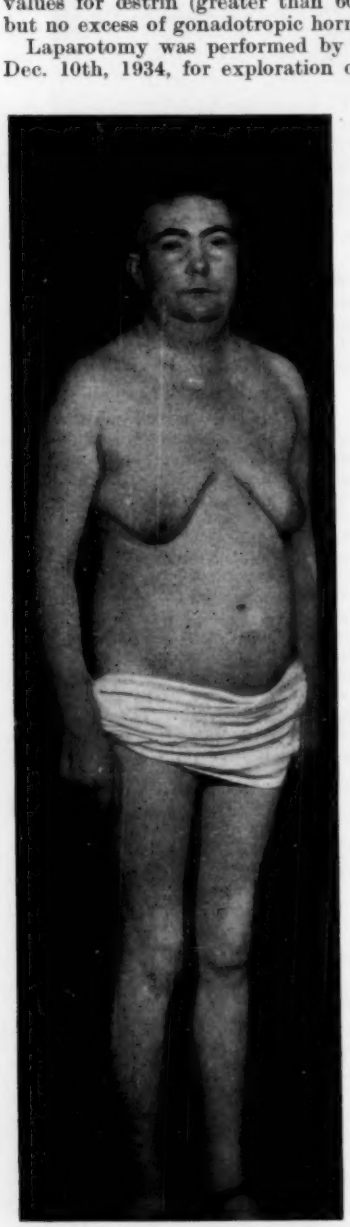


FIG. 4.—The patient in December, 1934.

The patient died a few hours later from shock.

PATHOLOGICAL REPORT

Operation specimen.—The tumour removed at operation measured 10 × 9 × 4 c.mm. (approx.) (Fig. 6). Weight 165 g. The surface was roughly nodular, no suprarenal was recognisable on naked-eye examination. The cut surface (Fig. 7) showed a solid but soft tumour divided up into irregular nodules by fibrous trabeculæ. Some of the tissue was pinkish and firm. The greater part was white with areas of necrosis, some yellow in tinge, some with a well-defined marginal zone.

The tumour was sliced through the centre, one half being preserved as a gross specimen. Material was taken from the other half and fixed in formal saline and Helly-Maximow.

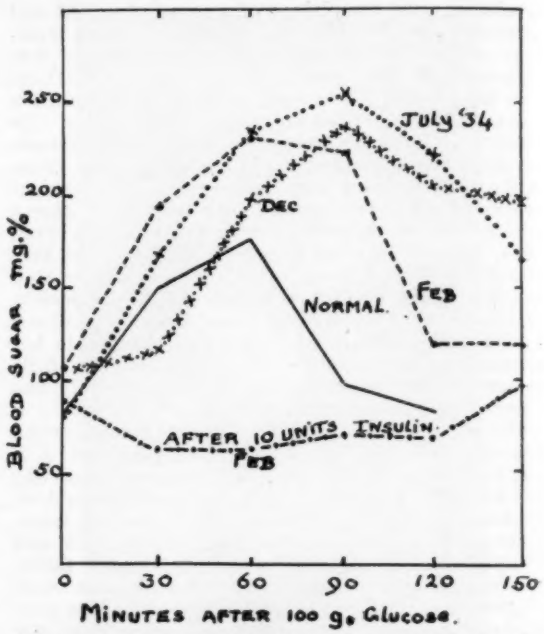


FIG. 5.—Showing blood-sugar curves at various dates in 1934
February, 1934. B.M.R. + 34%. R.Q. = 0·8.
December, 1934. B.M.R. − 37%. R.Q. = 0·725.

The red areas of the tumour consist of columns of large polyhedral cells and have the appearance of a cortical adenoma malignum. These are arranged round thin-walled blood-vessels and separated from adjacent columns by fine connective tissue fibrillæ. The columns average about 16 cells in width. Those cells near the blood sinuses have an eosinophil cytoplasm, those further off have a vacuolated cytoplasm which stains only faintly. The nuclei are rounded or oval and show a well defined nucleolus. In addition there are scattered groups of elongated cells with homogeneous eosinophil cytoplasm and elongated darkly staining nuclei; these groups are found near the blood-vessels.

In the white areas of the tumour the cells are arranged in less orderly fashion. There is a tendency for the cells to be arranged in broad sheets with little relation to the blood-vessels. This structure conforms to the descriptions of the cortical carcinoma. These cells vary considerably in size, some being very large. They also vary in shape. The cytoplasm is finely granular and stains well with eosin. The nuclei are darkly staining and irregular. Some binucleate cells are found. Areas of necrosis are frequent. The yellow areas are completely necrotic with accumulations of yellow pigment among the cell debris. The chrome reaction was not given by any of the cells in the tumour. Helly-fixed material or formal section treated with potassium bichromate (5 per cent. aqueous) and then stained by Kull's method showed numerous small fuchsinophil granules in the cytoplasm of those cells which are not vacuolated. The same granules show on staining with Heidenhain's iron hæmatoxylin.

The tumour is similar to that from Lescher's case described by Robb-Smith who kindly provided us with material for comparison, and similar granules can be demonstrated in the tumour cells of that case.

A small suprarenal found at the margin of one block of material, is separated from the tumour mass by fibrous connective tissue and consists of a narrow cortex with imperfect differentiation into zones. The cells are vacuolated and some show fuchsinophil granules with Kull's technique, but these are scanty. There is little recognisable medulla. The average width of the organ after fixation is 0·9 mm.

POST-MORTEM EXAMINATION

The subcutaneous fat over the trunk was very thick (5 cm. at the level of the umbilicus). The extraperitoneal tissue, the great omentum, mesentery, and appendices epiploicæ were loaded with fat.

Stomach and intestines were normal. The liver was enlarged, a nodule of secondary growth was present in the spigelian lobe 3·75 cm. in diameter, well defined, soft and white. Several smaller nodules were scattered through the organ 1·25–2 cm. in diameter: each was surrounded by a hæmorrhagic zone. The gall-bladder showed deposits of cholesterol in the mucosa but was otherwise normal. The heart showed moderate hypertrophy of the left ventricle. There was no valvular lesion. The myocardium was normal in appearance. The aorta showed slight thickening of the wall with early atheroma in the abdominal vessel.

There was some blood in the left pleural cavity and some collapse at the base of the left lung, a result of the operation. There were numerous subpleural spherical nodules of secondary growth which projected from the surface and similar nodules were present in the substance of both lungs. All were soft and pinkish-white and were easily shelled out from the surrounding lung tissue.

The lymphatic glands in the mediastinum and at the root of the lungs contained growth. There was some blood in the soft tissues behind the left kidney. The kidneys were pale but otherwise appeared normal. The thyroid was small in size but the cut surface was normal in appearance.

The left suprarenal had been removed at operation. The right was normal in shape and in area, but on section proved to be about a quarter of the normal thickness. The pituitary was slightly larger than normal owing to a very great accumulation of colloid in the pars intermedia. The uterus was small, the myometrium was pale and fibrous, a small endometrial polyp was present in the fundus. The ovaries were fibrous and showed no special features except for a cyst in the left containing altered blood and measuring 3 × 1·5 × 1·5 c.mm. The *right ovary* measured 2 × 2·5 × 1 c.mm. Sternum, ribs, and skull appeared normal.

MICROSCOPIC EXAMINATION

Secondary Growth.—In the liver the structure of the tumour resembles that of the yellowish areas of the primary tumour. The cells are polymorphic and arranged in broad sheets without definite relation to blood spaces. The cells have a varying amount of cytoplasm which stains well with eosin and is granular. With Kull's stain fuchsinophil granules are numerous. The granules stain well with Heidenhain's hæmatoxylin. The nuclei vary in size and shape and are darkly staining; some binucleate cells are present.

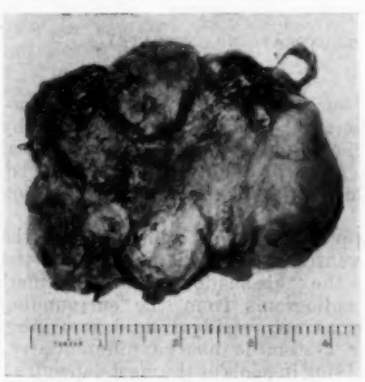


FIG. 6.—The tumour with an inch scale.

In the lung the growth is comparable to the red areas in the primary tumour. The cells are vacuolated and are arranged in columns round thin-walled sinusoids. Cells with eosinophil cytoplasm are scanty and no granular cells are found. Some of the sinusoids contain red blood corpuscles but many contain thrombus.

Other Organs.—The ovaries are atrophic and consist of dense fibrous tissue with some corpora albicantia. In the left a small follicular cyst is present and the large cyst is lined by a narrow zone of granulation tissue with numerous lutein cells. In the thyroid post-mortem changes are advanced. The gland appears normal with no evidence of hyperplasia. The right suprarenal shows a narrow cortex with imperfect differentiation into zones. There is no round cell infiltration as is usual in suprarenal atrophy in Addison's disease. The appearances suggest a hypoplasia.

PITUITARY GLAND

The pituitary gland was divided in the mid-sagittal plane. One half was fixed in saline formaldehyde, the other half was again divided and the two pieces were fixed in Helly's fluid and embedded in paraffin wax. The half fixed in formaldehyde measured 1·35 cm. from before backwards, 0·9 cm. from above downwards, and 0·65 cm. from side to side. The gland appeared to be normal except that the cleft representing the remnant of Rathke's pouch was greatly distended with gelatinous coagulum to form a cyst and measured 0·75 × 0·7 cm. The three pieces were then embedded together in paraffin wax so as to reconstitute the original gland, and were serially sectioned in the horizontal plane at 5 μ, and every twenty-fifth section was mounted. Some of the rejected sections were stained with hæmatoxylin and eosin and van Gieson. The serial sections were stained by a modification of Mallory's acid-fuchsin aniline-blue preceded by Ehrlich's hæmatoxylin (Crooke and Russell, 1935).[5]

FIG. 7.—The tumour in macroscopic section with an inch scale.

The posterior lobe is incomplete. It shows a very little pigmentation and close to the cleft a very slight infiltration with basophil cells.

The acini in a narrow zone bordering upon the cystic cleft are small and narrow, while their long axes are directed parallel to the circumference of the cyst. They are evidently compressed, but there is no distortion nor degeneration of their cells. In the remainder of the lobe many of the acini are exceptionally large: one group of acini filled with chromophobe cells measures 1·88 × 1·21 mm. and another group filled with ripe acidophil cells measures 0·71 × 0·53 mm. The basophil cells are arranged in the ordinary manner and there is no adenoma nor abnormally large aggregation of them. No excess of transitional basophil cells was detected.

A differential cell count of the relative numbers of the three different kinds of cells in the anterior lobe was made by Rasmussen's (1929)[3] method. Details of our method in imitation of Rasmussen's have been published (Crooke and Russell, 1935).[5]

Table I, shows the percentages of the three different kinds of cells found by Rasmussen (1933) in ninety-four normal adult non-pregnant females. Table II. gives the percentages found by us in the present case and those found by Lescher and Robb-Smith (1935)[2] in a similar case.

The percentages found by us in the present case are strictly within normal limits; the percentage of basophil cells is slightly above Rasmussen's minimum. The percentage of basophil cells found by Lescher and Robb-Smith in their case is slightly greater than the maximum recorded in Rasmussen's series (Tables II. and III.).

The chromophobe and acidophil cells are normal in appearance. The basophil cells, however, show a conspicuous change. Very few of the ripe basophil cells are of normal appearance. In the great majority part of the normal cytoplasm charged with ripe basophil granules is replaced by dense homogeneous hyaline cytoplasm,

which is stained a uniform greyish-blue by the modified Mallory method. The extent of this hyaline change shows great variations, which are apparently stages of a progressive involvement of the cytoplasm. In most of the cells the greater part of the cytoplasm is hyaline. In some of these the granular cytoplasm is reduced to a narrow zone in the extreme periphery of the cell body and also a demilunar or rounded area against the nucleus, which in the case of an eccentric nucleus lies against the side upon which the cytoplasm is most abundant. In others the granular cytoplasm is confined to one or other of these two sites. In many cells the entire cytoplasm is hyaline. A few medium or large vacuoles, similar to those often seen in normal ripe basophil cells, may be present in the hyaline cytoplasm. The remnants of granular cytoplasm are usually finely vacuolated. This vacuolation is especially conspicuous in remnants that form a rim round the cell. The nuclei of the affected cells show no sign of degeneration, and two or more nuclei are sometimes present. No mitoses were observed. The change was not found in the basophil cells in the posterior lobe.

TABLE II

Percentage of different cells in 94 normal adult non-pregnant females (Rasmussen, 1933)

Cell types.	Minimum.	Maximum.	Median.	Mean and probable error.	Standard deviation	Coefficient of variation.
Chromophobe	32·9	74·1	49·0	49·6 ± 0·47	6·79	14
Acidophil	19·2	57·5	44·2	43·4 ± 0·56	8·10	19
Basophil	3·0	15·6	6·6	7·0 ± 0·20	2·94	42

TABLE III

Percentage of different cells in two cases of adreno-cortical syndrome

	Our case.	Lescher and Robb-Smith's case.
Chromophobe	49·78	31·5
Acidophil	45·81	50·25
Basophil	4·41	17·25

REMARKS

There is a marked discrepancy between the count of the percentages of different cells in the pituitary gland in this case and the count in the case of carcinoma of suprarenal cortex associated with an almost identical syndrome of basophilism which has been described by Lescher and Robb-Smith.[2] In the present case the percentage of basophil cells was within the normal limits and slightly above the minimum found by Rasmussen[4] in adult women. Lescher and Robb-Smith, on the other hand, in their case found a percentage slightly above the maximum of Rasmussen. It is, unfortunately, not possible to judge the extent to which the two imitations of the method of Rasmussen[3] give comparable results. The method employed in this case has been described in detail and its conformity to Rasmussen's method has been tested by a count of the gland from a normal man[5]; the percentages obtained were close to the modes found by Rasmussen[3] in 100 normal adult males. Prolonged deep X ray therapy had been directed to the pituitary fossa in this case, so that the possibility of this having reduced the number of basophil cells must be considered. There is, however, no evidence that X rays destroy basophil cells more than chromophobe or acidophil cells. Further, there is no evidence of degeneration of the basophil cells unless it be the hyaline change that has been described in the cytoplasm. Dr. Robb-Smith has kindly sent us a section of the pituitary gland from the case described by him with Dr. Lescher. No X ray treatment had been given in this case. The section, when stained by the Mallory method, shows exactly the same hyaline change in the basophil cells. The hyaline change cannot, therefore, be attributed to X ray therapy.

The occurrence of this hyaline change, its nature, and its significance in the syndrome of basophilism are discussed by one of us (A. C. C.) in another paper, which will shortly be published. The view will be put forward that it should be considered to be an expression of altered physiological activity and not a degeneration in the sense of a change leading to the death of the cell.

SUMMARY

A case clinically indistinguishable from the syndrome attributed to basophil adenoma of the pituitary gland is reported. A carcinoma of the suprarenal cortex was removed at operation and metastatic growth was found at autopsy. In serial sections of the pituitary gland no basophil adenoma was found. The differential cell count was within normal limits. A hyaline change in the basophil cells of the anterior lobe is described.

REFERENCES

1. Hare, Dorothy C.: Proc. Roy. Soc. Med., 1934, xxvii., 1017.
2. Lescher, P. G., and Robb-Smith, A. H. T.: Quart. Jour. Med., 1935, n.s., iv., 23.
3. Rasmussen, A. T.: Amer. Jour. Path., 1929, v., 263.
4. ,, ,, : Ibid., 1933, ix., 459.
5. Crooke, A. C., and Russell, Dorothy S.: Jour. Path. and Bact., 1935, xl., 255.

VENTRICULOGRAPHY BY OPAQUE INJECTION

BY E. W. TWINING, M.R.C.S. Eng., D.M.R.E.

ASSISTANT RADIOLOGIST TO MANCHESTER ROYAL INFIRMARY LECTURER IN RADIOLOGY IN THE VICTORIA UNIVERSITY, MANCHESTER; AND

G. F. ROWBOTHAM, F.R.C.S. Eng.

CHIEF ASSISTANT IN THE NEUROSURGICAL SERVICE, ROYAL INFIRMARY, MANCHESTER

(WITH ILLUSTRATIONS ON PLATE)

NEUROLOGICAL surgery owes much to pneumography of the cerebral ventricles, introduced by Dandy, which in the hands of the expert neurological surgeon has been, and will doubtless continue to be, of inestimable value in the diagnosis and localisation of brain tumours.

There are, however, numerous difficulties in the interpretation of ventriculograms, largely due to the fact that it is only the "air shadow" which is differentiated in the radiograms from the surrounding brain tissue, whereas any residual fluid remaining in the ventricular system is not so differentiated. This residual fluid, lying in pools at the most dependent parts of the ventricles, often confuses the picture, for it may be impossible to say whether an abnormality of the ventricular contour is due to this fluid or to something in the brain tissue, or in the cavity of a ventricle.

In ventriculography by the method of air injection we are therefore reduced to two alternatives: we may either drain the ventricles very completely in order to obtain a complete "air-cast" of the entire ventricular system, or we may partially fill the ventricles with air, and then make a series of radiograms with the head in different positions, using the air bubble to explore successively the contours of different regions of the system. The latter is the

method usually employed in Mr. Jefferson's clinic at Manchester Royal Infirmary, since it avoids the severe and often dangerous alterations in intracranial tension which may follow total air replacement. This "piecemeal" method involves numerous changes in the position of the patient, and the taking of a large number of films; the technique is somewhat exacting, and in order to outline the third and fourth ventricles the patient must adopt a position amounting to inversion of the head.

One of us (E. W. T.) has worked out a technique for this which has been described in a paper[1] read before the section of radiology, Royal Society of Medicine, in November, 1933, and in more elaboration in a paper before the Society of British Neurological Surgeons in November, 1934.

Although the methods just mentioned have afforded convincing data, certain difficulties connected with the interpretation of ventriculograms, usually due to pools of residual cerebro-spinal fluid, prompted the suggestion by one of us (E. W. T.) that a "double-contrast method" would be of considerable assistance. By "double-contrast method" is meant the introduction of a radiopaque diffusible material into the ventricles which would differentiate the fluid-filled part of the ventricles from the surrounding brain, as well as from the air introduced. Alternatively, it was foreseen that the diffusible material might be introduced instead of air, which would produce opaque ventriculograms, and would avoid the alteration of intracranial tension which accompanies air replacement. It was hoped that an image might be obtained of sufficient density to render possible satisfactory stereoscopic views of the ventricular system, since stereoscopic views of the *air*-filled ventricles are notoriously unsatisfactory, owing to lack of contrast.

Various substances were considered. *Lipiodol*, so commonly used for opaque injections of the spinal theca, was thought to be unsuitable because it is not miscible with cerebro-spinal fluid, but tends to collect into droplets. *Uroselectan* was next considered, and an attempt was made to render the intraventricular cerebro-spinal fluid opaque by injecting 5 c.cm. of this substance. The resultant shadow was of very unsatisfactory density. *Thorotrast* was then suggested (E. W. T.) as being suitable. This substance is frequently used for injection of the arterial system and has been injected in quantities of 60 c.cm. into arteries and veins, being non-toxic when so used. It later becomes deposited in the reticulo-endothelial system, chiefly of the liver and spleen. Preliminary experiment showed that it was readily diffusible in water and in cerebro-spinal fluid, and that a concentration of 1 in 8 would give a good radiographic shadow. It was therefore decided to use the method in the following case, in which there was evidence of cerebral tumour with conflicting localising signs—a case in which it was felt essential to obtain the utmost possible detail of the ventricular contours, while avoiding total ventricular drainage.

A CASE FOR INVESTIGATION

The patient, an engine driver aged 50, was a well-developed muscular man. His illness began abruptly on the evening of Feb. 13th, 1935, with a general headache, which became very severe, necessitating his going to bed, and rendering him incapable of going to work the next morning. Since that time he had suffered from severe generalised headaches, which came on every morning and lasted for a few hours. They were commonly associated with vomiting. There had not been any deterioration of vision, and from his wife it was ascertained that he had changed considerably, in that he had become drowsy and distant in his manner. There were no other symptoms.

On admission to hospital on April 2nd he seemed extremely drowsy, but on closer investigation it was found that usually he was not asleep, but rather disinterested in the surrounding activities of the ward. On being questioned he would answer slowly but quite rationally; he was not apathetic about his own condition, but very willing to coöperate. There was no aphasia or urinary incontinence.

He had a low-grade bilateral papilloedema, rather more obvious on the left side, but no other neurological signs apart from a slight fine nystagmus to the right, and an indefinite extensor plantar response on the left side. The Wassermann reaction was negative in the blood and cerebro-spinal fluid. A radiographic examination of the skull revealed no evidence of cerebral tumour, and the protein content of the cerebro-spinal fluid was 80 mg. per 100 c.cm., the normal being 25 mg.

A diagnosis of a cerebral tumour was made, but it could not be localised with precision, the suggestions being an intraventricular tumour (because of the high cerebro-spinal fluid protein content), a right frontal meningioma, or a tumour of the corpus callosum. A ventricular estimation was performed (G. F. R.) which proved: (1) that there was no lateral displacement of the ventricles; (2) that they were in communication; and (3) that they were dilated. Again sufficient evidence was not forthcoming to permit of localisation, and it was therefore thought necessary to make a ventriculographic examination. In view of the presumptive diagnosis of intraventricular tumour, a complete study of the outlines of the ventricles was desirable. Accordingly, in view of the man's condition, and of the risk attending total air replacement, it was decided to adopt the above suggestion of injecting a suitable amount of radiopaque diffusible substance.

THE METHOD AND ITS RESULTS

With the patient lying on the left side 25 c.cm. of fluid was withdrawn from the right ventricle, and 10 c.cm. of air was introduced, followed by 10 c.cm. of thorotrast. The thorotrast was poured into the funnel used for the reception of the cerebro-spinal fluid, and mixed with it by agitation. It was then run into the ventricles by raising the funnel. Radiograms were made within 15 minutes. Diffusion of the thorotrast had been completed by this time as the radiograms showed even density in both ventricles. The presence of opaque cerebro-spinal fluid in the left ventricle proved that the lateral ventricles communicated freely.

A complete series of ventriculograms was made. The patient's condition was good. He did not complain of the headache generally present when air replacement is employed. The pulse-rate was 100 and he was sweating rather freely; but his mental condition was undisturbed, he coöperated readily, and he had no toxic symptoms.

The success of the injection from a radiographic point of view was very gratifying (Figs. I.–III. on Plate). The ease with which the third ventricle was shown should be noted. This method necessarily succeeds in showing the third ventricle (if the foramina of Monro and the ventricular cavity are patent), because it is filled with cerebro-spinal fluid, mixed with the opaque medium. The 10 c.cm. of air which was introduced in this case collected for the most part in the uppermost ventricle in the lateral lying position, and in the frontal horns in the supine position, so that there was very little air in the third ventricle at any time. The contours of this ventricle were therefore very clearly delineated in all views. The fourth ventricle was also outlined.

In order to ensure filling of the third and fourth ventricles by opaque fluid, lateral films were also taken with the patient sitting up—thus reversing the

technique we ordinarily use to fill it with air (inversion method). This is very simple, and gets over the difficulty which has attended the use of air ventriculography of the third ventricle; for in that procedure it is often difficult to get rid of all the fluid in the third ventricle, which tends to remain in the suprapineal recess at its posterior end, and therefore introduces an element of doubt into the interpretation of the ventricular contours. The new method eliminates this difficulty. It is the most dependent point of the ventricle which is shown as an opaque shadow, exactly as in a barium investigation of the alimentary tract.

THE RADIOGRAMS AND THEIR INTERPRETATION

The radiograms were of outstanding clarity and definition.

The lateral ventricles were slightly hydrocephalic. The right lateral ventricle showed a striking deformity: it was flattened from above downwards, and depressed below the level of the left. The deformity was most marked in the body of the ventricle, the frontal horn showing depression but less conspicuous deformation than the body. The right temporal horn was compressed from side to side and the right occipital horn flattened. The ventricles were not appreciably displaced from the mid-line. The foramina of Monro were patent, and the third ventricle lay in the middle line.

The lateral view showed a large rounded filling defect occupying the posterior two-thirds of the third ventricle; the aqueduct of Sylvius was compressed and distorted; the fourth ventricle outlined (though somewhat faintly, owing to the compression of the aqueduct).

Interpretation is extremely difficult. The flattening of the body of the right lateral ventricle on its upper side suggests a lesion of the corpus callosum. The possibility has to be considered that it results from a right temporal tumour, since it is well known that a temporal lobe tumour may cause this deformity by displacing the corpus callosum under the falx cerebri, so that the ventricle on the side of the tumour is lower than that on the opposite side.[2] But in this case there is no appreciable displacement; the cause of the flattening must therefore be above the ventricle, possibly in the corpus callosum itself.

The deformity in the posterior end of the third ventricle is very striking. If unaccompanied by any deformity of the lateral ventricles it would point to a pineal tumour, choroidal plexus tumour, or other tumour of the third ventricle. It is impossible on the radiograms to eliminate these, but in the presence of an associated deformity of the right lateral ventricle the possibility arises that the third ventricle deformity may be due either to (1) an enlargement near the posterior end of the corpus callosum, pushing the posterior contour of the third ventricle forwards; or (2) a bulging of one optic thalamus towards the mid-line.*

After the radiograms were made the patient was again taken to the operating theatre and 20 c.cm. cerebro-spinal fluid was removed from the ventricles. This was compared with test mixtures made up in test-tubes containing thorotrast and water. Mixtures of 1 in 2, 1 in 4, 1 in 8, 1 in 16, and 1 in 32 were radiographed in test-tubes of equal diameter together with the specimen of cerebro-spinal fluid obtained from the patient's ventricles, all being included in a single exposure. The radiographic density of the specimen was less than that of a mixture of thorotrast and water, 1 in 4, but greater than a mixture of 1 in 8. It was estimated as 1 in 6.

Further radiographic examination two hours later showed that almost all the thorotrast had left the ventricular system, only a faint shadow being now visible. It was not possible to say how much had been removed, and how much had leaked away into the spinal theca. Only a trace of air remained.

A second case of ventriculography by thorotrast injection is demonstrated in Fig. IV. This radiogram is a lateral view from a case of verified right-sided acoustic neuroma. It demonstrates clearly the normal outline of the lateral and third ventricles and of the aqueduct of Sylvius. The anatomical points depicted in the radiogram are illustrated in the line diagram, Fig. IV.*a*. The contour of the normal third ventricle in this radiogram should be compared with that of the deformed third ventricle in the first case (Fig. I.).

DISCUSSION

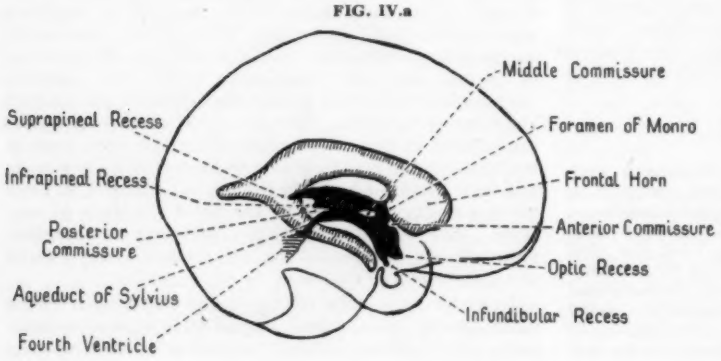
Other radiopaque substances have been used for ventriculographic examination, notably lipiodol (Sicard, Paraf, and Laplane, 1923). Balado has employed lipiodol since 1928, and Lysholm[3] has recently published an extensive review of that method. Lysholm refers to risks attending its use, especially in the presence of stenosis of the aqueduct and fourth ventricles.

It must be emphasised that lipiodol is not miscible with cerebro-spinal fluid. It is therefore only used in small quantities as an accessory to air replacement. It cannot be used for complete outlining of the ventricles. The method we describe, of using a substance which is freely miscible with cerebro-spinal fluid, offers considerable advantages. Radiographically the results surpass those of air injection in density and definition, and in the ease with which the whole ventricular system can be shown, not only in its main features, but also in its fine details. Stereoscopic views are extremely satisfactory.

From the point of view of the patient's well-being the method offers the great advantage that intracranial tension is unaltered, and that the not inconsiderable risk of air replacement (estimated by some authors to have a mortality of 10 per cent.) is obviated.

Our results were obtained with thorotrast, which from a radiographic point of view is adequate. Other workers have doubted the suitability of thorotrast to which they have ascribed irritative properties.

FIG. IV.a



* Presence of tumour of the optic thalamus was later verified. Tumours were also present in the cerebellum and in the right cerebrum above the corpus callosum.

DRS. MILLER AND GAGE : DUODENAL ILEUS

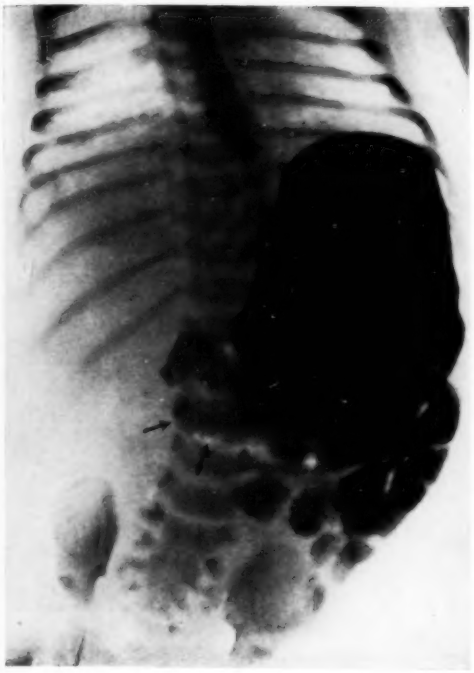
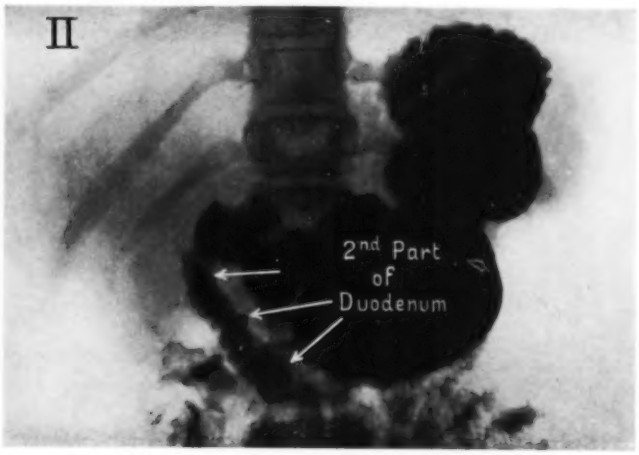


FIG. I. (Case 2).—Aged 16 days. Opaque meal on ingestion, prone. Œsophagus dilated, stomach enlarged, duodenum shows stasis (see arrows).

FIG. II.—Girl aged 8 years. Opaque meal at two hours, prone. Enlarged stomach showing hyperperistalsis ; duodenal stasis.



DR. TWINING AND MR. ROWBOTHAM : VENTRICULOGRAPHY BY OPAQUE INJECTION

FIG. I.—Lateral ventriculogram (left side down). Deformed right lateral ventricle. Rounded filling defect in posterior end of third ventricle.

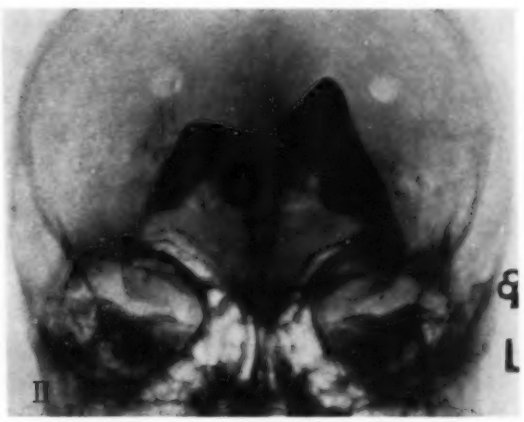


FIG. II.—Same case. Antero-posterior radiogram (supine). Body and temporal horn of right lateral ventricle deformed.

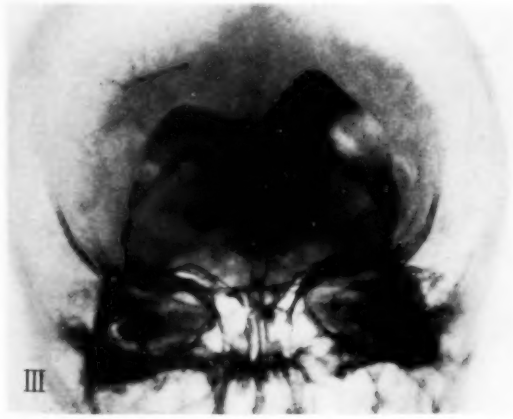
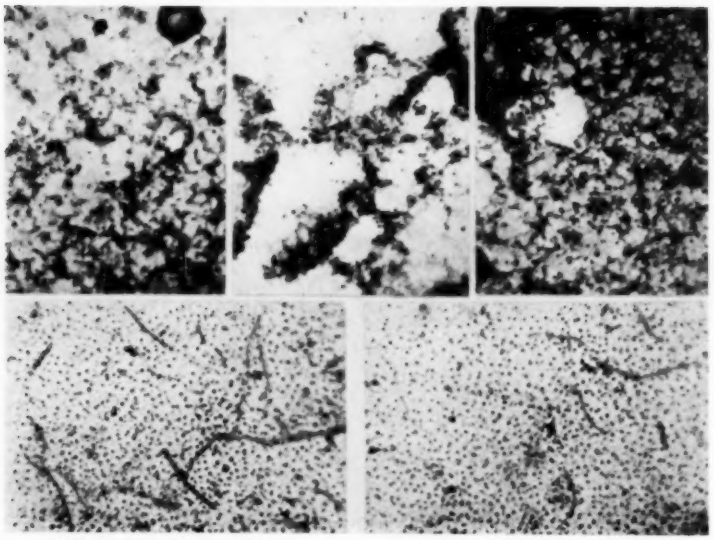


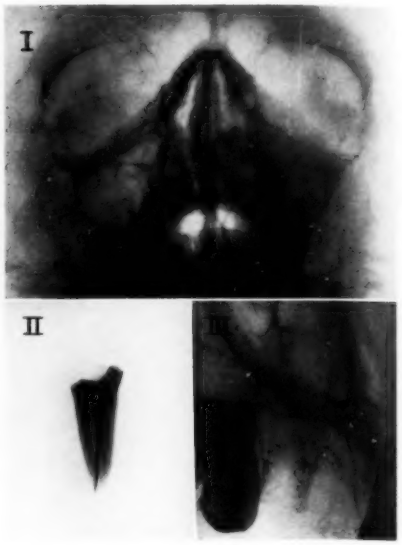
FIG. III.—Same case. Postero-anterior radiogram (prone).

FIG. IV.—Lateral ventriculogram from a case of right acoustic neuroma (see Fig. IVa. in Text).

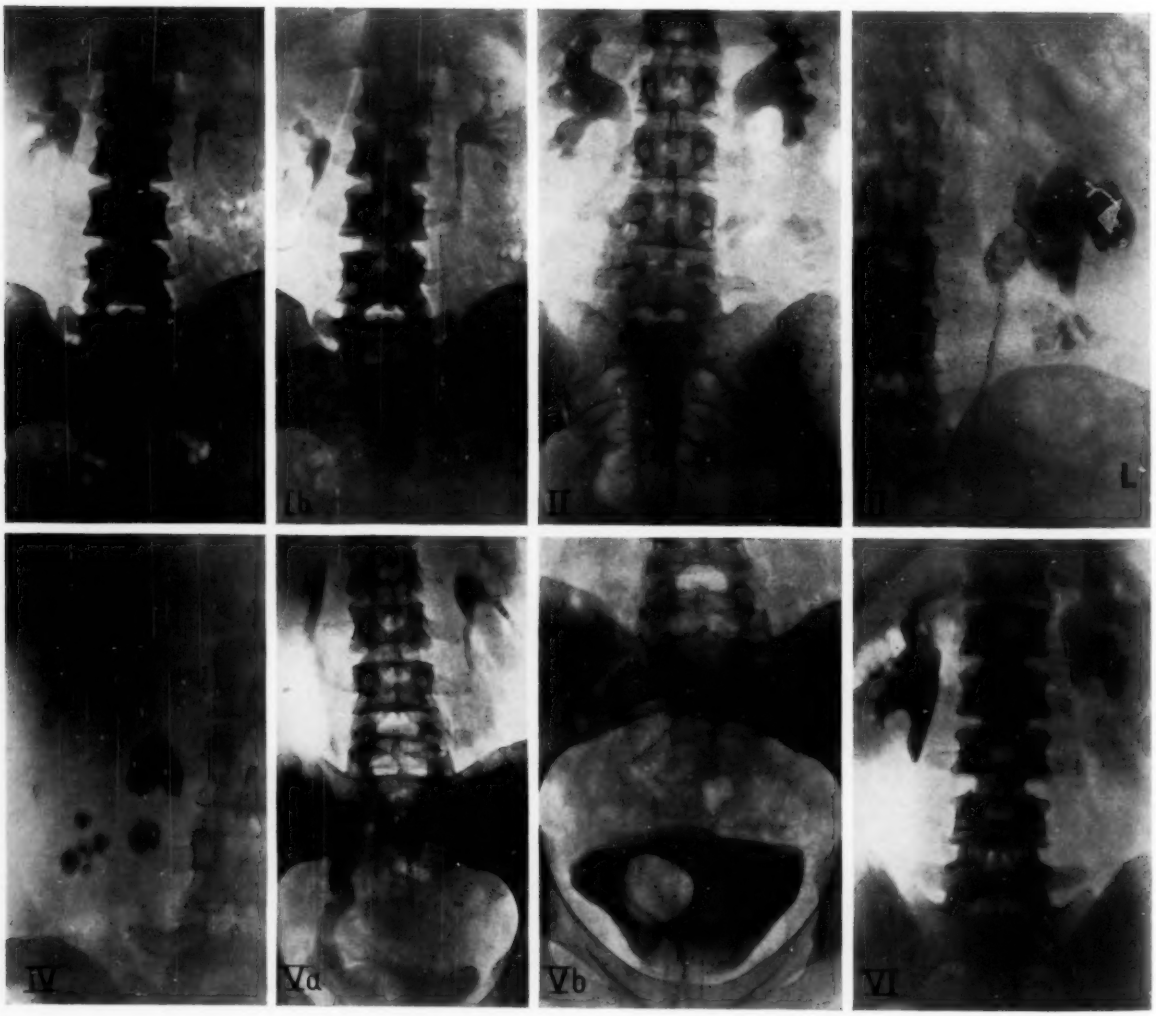
DR. COLES: VIRUS BODIES IN RHEUMATISM



MR. STRONG AND DR. BARCLAY: INFECTION OF ANTRUM



PROF. ELLIS: SIGNIFICANCE AND TREATMENT OF PYELITIS



In four cases observed in this clinic for periods of up to three weeks between thorotrast injection and operation, there have been no alarming or serious symptoms. The immediate condition of the patients after injection compared extremely well with that of patients who have had air replacement. The latter usually complain of headache, often severe, and tolerate the necessarily lengthy and complicated X ray examination badly. By contrast, the patients who had thorotrast coöperated well in the examination, which caused them no inconvenience. Our general impression is that the immediate effects of thorotrast are milder than those due to air. We cannot yet claim that it is the ideal substance; it has been shown by Alexander,[4] in experimental work in the dog, to cause proliferation of the ependymal cells, which apparently become phagocytic to the thorotrast granules. This proliferation, which is also caused by oily substances (e.g., olive oil) might conceivably produce late effects. A longer time of observation is necessary for the full evaluation of end-results. We believe, however, that the method in principle is correct, and that it may supersede air replacement for the following reasons: (1) Complete outlining of the ventricular system is obtained with greater possibilities of precise interpretation. (2) It simplifies radiographic technique (3) Stereoscopic radiography is possible. (4) There is a minimum interference with compensated intracranial pressure, thus diminishing risk of tumour shift and hæmorrhage.

Our best thanks are due to Mr. Geoffrey Jefferson for permission to publish the cases described in this preliminary communication, and for his interest and coöperation.

REFERENCES

1. Twining, E. W.: Proc. Roy. Soc. Med., 1934, xxvii., 5, p. 591.
2; Torkildsen, A., and Pirie, A. H.: Amer. Jour. Roentgenol., 1934, xxxii., 145.
3. Lysholm, E.: Acta Radiologica, 1935, Suppl. xxvi.
4. Alexander, L., Jung, T. S., and Lyman, R. S.: Arch. Neurol. and Psychiat., 1934, xxxii., 1143.

VIRUS BODIES IN THE PERICARDIAL FLUID OF RHEUMATIC FEVER

AND OTHER CONDITIONS, AND IN THE JOINT FLUID OF RHEUMATOID ARTHRITIS

By Alfred C. Coles, M.D., D.Sc., M.R.C.P. Lond., F.R.S. Edin.

CONSULTING PHYSICIAN TO THE ROYAL NATIONAL SANATORIUM AND ROYAL VICTORIA HOSPITAL, BOURNEMOUTH

(WITH ILLUSTRATION ON PLATE)

In certain instances of infection where larger organisms cannot be found and the infective agent is unknown, close observation has revealed the presence of minute bodies that can be seen by appropriate illumination or stained by suitable procedures. In some cases the presence of specific antibodies such as agglutinins has been demonstrated for these "elementary bodies"; and in at least two examples—viz., vaccinia and psittacosis—further evidence has been forthcoming that the bodies in question are the actual virus of the disease, because when separated off by high-speed centrifuge and injected into animals they reproduce the disease.

For years past I have spent much time in searching for virus bodies in such material as I have been able to obtain from likely cases—e.g., vaccinia, varicella, herpes, molluscum contagiosum, psittacosis—and amongst other material I have now examined a considerable number of specimens of pericardial fluid for such bodies. In view of the interesting and promising results of Schlesinger and his colleagues[1] published in THE LANCET of May 18th on the elementary bodies in rheumatic fever, it has occurred to me that these observations, made quite independently of their work, may possibly be of some interest.

Methods.—Films were made from the exudate as thin as possible at one end and considerably thicker at the other end of a slide. These when dry were fixed in alcohol for about 5 to 10 minutes, and then stained in well-diluted Giemsa for 24 hours. At the end of 12 hours the stain was usually renewed. Although all virus bodies are clearly stained in 12 hours, preparations which had been subjected to the stain for 24 hours were preferred. When the stained films were quite dry I often found it advantageous to differentiate part of the smear by pouring a few drops of orange-tannin on half the film, and after allowing this to act for about 5 minutes, the whole slide was washed in running water. In some cases films were also made with Indian ink, as in Burri's method for demonstrating *Sp. pallida*. Quite early in my work I entirely gave up the use of any of the mordanted stains with aniline dyes or with silver, as used in flagella staining, as I found that

[1] Schlesinger, Signy, Amies, and Barnard: THE LANCET, May 18th, p. 1145.

LEGENDS TO ILLUSTRATIONS ON PLATE

DR. COLES: VIRUS BODIES IN RHEUMATISM

Photomicrographs of Giemsa-stained films (× 1135). Upper row from exudate on visceral layer of pericardium. Lower row from suspension in broth (1 in 10) of pericardium.

MR. STRONG AND DR. BARCLAY: INFECTION OF ANTRUM

FIG. I.—Radiogram showing abnormally dense shadow in region of left antrum.

FIG II.—Radiogram of left upper central incisor, after removal, showing passage of root filling through the apex.

FIG. III.—Occlusal film showing areas of rarefied bone passing up into the floor of the left antrum.

PROF. ELLIS: SIGNIFICANCE AND TREATMENT OF PYELITIS

FIG. I.—Normal pelvis and ureter. (a) The right pelvis is in diastole and is much larger than the left, which is in systole. (b) Same patient 20 minutes later. The right pelvis is in systole and is now smaller than the left, which is in diastole.

FIG. II.—Normal pregnancy at fifth month. Pelvis and ureters dilated; ureters tortuous.

FIG. III.—Excretion pyelogram showing large pyonephrosis in a man who had been treated for four years as a case of pyelitis.

FIG. IV.—Multiple calculi in a patient with "pyelitis" of pregnancy. No previous urinary symptoms.

FIG. V.—Ureterocele found on routine examination of a patient with *B. coli* pyelitis. (a) Excretion pyelogram showing dilated ureter and filling defect in the bladder. (b) Cystogram showing large clear area at the site of the ureterocele.

FIG. VI.—Excretion pyelogram showing bilateral hydronephrosis due to ureteral obstruction by bilateral salpingitis. This patient had been under observation for seven years with attack of recurrent "pyelitis."

infinitely clearer and much more reliable images of all virus bodies were obtained by the slower Giemsa staining.

OBSERVATIONS

During a research, extending over more than two years, in which I have been coöperating with Dr. M. H. Gordon on various virus diseases, notably cases of lymphadenoma, I have had ample opportunity of examining microscopically numerous pathological material for virus bodies, and as controls.

Rheumatic fever.—Although rheumatic fever has been regarded as having many of the characters of an infective disease, the actual exciting cause still seems undetermined. Various cocci, diplococci, and more especially streptococci, have been suggested as the probable cause, yet none of these has received general acceptance.

Dr. Gordon sent me films made from recent exudate on the visceral layer of the pericardium of a boy of 16 who had succumbed, on April 17th, 1934, to acute rheumatic fever with pericarditis, and also a little later some capillary tubes containing a 1 in 10 suspension in broth of the inflamed pericardium. On microscopical examination of the Giemsa-stained films made directly from the pericardium I saw very small but very definite round or oval bodies, mostly isolated, a few in pairs, but rarely in chains. They were faintly stained red with Giemsa and were best seen on the stained fibrin background. They resembled all other virus bodies, not only in their difficulty in staining a faint red colour, but also in the fact that they show minute flagella-like appendages when carefully examined under a high power. Giemsa-stained films when examined by dark-ground illumination show these minute bodies very distinctly, and small as they are, they appear as very conspicuous and distinctive objects even when seen with the 8 mm. apo. objective, especially with the comp. ocular 18.

Films made from the suspension in broth, fixed and stained as above, show masses of these small bodies some singly, many in twos or threes, and not a few in short chains. Here they were often seen connected together by exceedingly delicate filaments. Films made from the suspension with Indian ink as in Burri's method show the character and shape, and especially well the filaments connecting three or four of these bodies.

The actual size of these virus-like bodies is very difficult to determine, but when measured by Nelson's extinction method they appeared to vary from about 0·17 to 0·26 μ in diameter, and measurements taken from photomicrographs give very similar figures. They are considerably smaller than the Paschen bodies of vaccinia or the Hodgkin bodies of lymphadenoma. It is well however to point out that measurements of virus bodies in general, as made by such experts as Mr. E. M. Nelson and Mr. Eliot Merlin, differ very considerably from those given by most English workers, especially when estimated by filtrative methods, and I generally find that my estimation of size is about double that given by such workers.

The accompanying photomicrograph (reproduced on Plate), taken from Giemsa-stained preparations, gives a better idea of the appearance of these very small bodies than any verbal description.

Pericardial fluid.—From June to November, 1934, Dr. Gordon kindly sent me both the fluid and films from the pericardial exudate of 50 cases dying from various causes. These patients, whose age ranged from infancy to extreme old age, had died from the most varied conditions—accidents, sepsis, malignant, leukæmia, hydrocephalus, meningitis, &c. Of these exactly half showed virus bodies closely allied to those found in the endo- and pericardium of rheumatic fever. Of course, in some other bacteria—e.g., diplococci, streptococci—were also present.

Rheumatoid arthritis.—During July and August, 1934, films and fluid from affected joints—mostly the knee-joint—were sent by the late Dr. Vincent Coates, through the kind office of Dr. Leo Delicati, from the Royal Mineral Water Hospital, Bath. These joints had, I understand, been aspirated as part of the treatment, and the notes stated that in most of these cases many joints are now affected. In 3 out of 5 of these cases I found very numerous virus bodies resembling those seen in the pericardial fluid of the case of rheumatic fever.

Dr. Douglas Collins, who had been appointed for special research work at the Royal Bath Hospital, Harrogate, kindly sent fluid from the knee-joints of 3 cases of rheumatoid arthritis. One of these fluids was unfortunately contaminated, but in one of the other two very numerous virus bodies were found. Earlier in the year fluid and films from a case at St. Bartholomew's Hospital were sent, and this proved positive. Thus out of 9 cases 5 at least were positive. In all these cases films were stained also with Ziehl-Neelsen's method, and a prolonged search was made for acid-fast bacilli, as these have been said to be often present in the joint fluid of cases of rheumatoid arthritis. In none of them did I find any evidence of tubercle or other acid-fast bacilli.

COMMENT

The questions which naturally arise are what do these small bodies—which have all the characteristics of the virus bodies found in many filtrable diseases which I have been studying for more than 20 years—represent? Are they the actual infective cause of acute rheumatic fever on the one hand, and of rheumatoid arthritis on the other; and how is the presence of somewhat similar bodies in 50 per cent. of the pericardial fluid of other conditions to be explained?

These are questions which it seems impossible at present to answer. My impressions are that probably the virus bodies found in the pericardial fluid of the case of rheumatic fever and those found in the joint fluids of rheumatoid arthritis may belong to the same species, and might well represent the actual causal organism. From a clinical and pathological aspect both these diseases are more closely associated with a virus than a bacterial origin, but I must leave the solution of these questions to those more able to answer them, and time may solve some of the problems. In this brief note I have only recorded what the microscope has revealed.

I would here like to record my sincerest thanks to Dr. M. H. Gordon, F.R.S., for his invaluable help, suggestions, and kindness in supplying me with material over such a long period.

GLOUCESTERSHIRE ROYAL INFIRMARY.—The work-people's contributory scheme has obtained 15 new groups. A new X ray department and a new nurses' lecture room are to be added to the hospital.

WESTON-SUPER-MARE HOSPITAL.—The work of this hospital continues to expand, and last year the total number of in-patients was 1126, which constituted a record. The number of out-patients has increased from 795 to 1131 in the last two years. Ordinary income exceeded ordinary expenditure by £272. The completion of the buildings and equipment caused an expenditure of over £3000 on capital account.

PYELITIS
ITS SIGNIFICANCE AND TREATMENT*

By ARTHUR ELLIS, M.D. Toronto, F.R.C.P. Lond.
DIRECTOR OF THE MEDICAL UNIT, LONDON HOSPITAL; PROFESSOR OF MEDICINE, UNIVERSITY OF LONDON

(WITH ILLUSTRATIONS ON PLATE)

THE subject I have chosen for my lecture has three attractions: first, it is one of the few conditions common both in the wards of a hospital and in general practice; secondly, it is one which is amenable to treatment; and thirdly, there have lately been advances in our knowledge of it which may not yet be generally familiar.

Pyelitis is common; its symptomatology is well known and the diagnosis usually easy. Accordingly I do not propose to say anything here about symptoms and about diagnosis, only to recall that when the condition occurs in infants it is readily missed; hence it should always be remembered as a cause of pyrexia of unknown origin in these patients. The general public commonly speak of pyelitis as "cystitis"; but primary cystitis is in fact relatively rare, and the great majority of cases of so-called cystitis are in women examples of pyelitis, in men of prostatitis. Acute cystitis, when it does occur, is usually accompanied by a degree of strangury greater than that seen in acute pyelitis and usually also by tenderness over the bladder, a sign which is absent in pyelitis.

THE SIGNIFICANCE OF PYELITIS.

An appreciation of the anatomy and physiology of the pelvis of the kidney and ureter is essential to an understanding of the significance of pyelitis. The renal pelvis and ureter are not, as we used to consider them, merely passive structures conducting the urine secreted by the kidney to the bladder, but are active structures with muscular walls, which, by their contraction, pass the urine along its appointed course. We now know that both pelvis and ureter have a slow peristaltic activity. We believe also that there is a sphincter-like action at the point of junction of pelvis and ureter and also at the opening of ureter into bladder. The accompanying intravenous pyelograms show well the difference in size of the pelvis in systole and in diastole (Fig. I. on Plate).

The importance of this conception of the active flow of urine in the pelvis and ureters lies in the fact that only when interference with the outflow of urine is present is infection of the pelvis of the kidney likely to occur. The importance of proper emptying in the prophylaxis of bladder infections is generally recognised. A normally emptying bladder is infected with difficulty and, if infected, usually rapidly recovers; whereas in the bladder with retained urine even the most careful catheterisation leads to infection and this infection is difficult to overcome until adequate drainage is established. It is perhaps not so generally appreciated that the same rule holds for the pelvis of the kidney. The normally acting pelvis, ureters, and bladder are rarely infected and clear rapidly if they are, whereas anything which leads to a retention of urine within them renders them at once susceptible to infection and makes such infection difficult to overcome.

This brings us to the causes of obstruction of urine within the renal pelvis. This method of approach is valuable, because it gives us a rational understanding of the causes of pyelitis and should lead to the examination of our patients with pyelitis for such obstruction. No case of pyelitis should be considered satisfactorily explained until some cause of urinary obstruction within the bladder, ureter, or pelvis has been demonstrated.

Pregnancy easily occupies first place as the commonest cause of obstruction to normal urinary flow; it is not surprising therefore that it is also the commonest cause of acute pyelitis. From the results of intravenous pyelography we have learnt that dilatation of one or both ureters, most frequently the right, is so constant in pregnancy that it may almost be described as normal. The degree of dilatation is well demonstrated in Fig. II., which is a pyelogram taken at the fifth month of an uncomplicated first pregnancy. The explanation of this dilatation is still quite uncertain; it is not known whether it is due to direct pressure of the gravid uterus on the ureter or to paralysis of the nerves supplying it, or to some quite other mechanism. The dilatation begins quite early in pregnancy, persists until after parturition, and then rapidly subsides; as a rule the ureter and pelvis seem to regain their normal appearance about three weeks after delivery. There is some evidence that the occurrence of infection may retard this return to normal and that in some cases of chronic pyelitis the ureters and pelvis remain permanently somewhat dilated.

The other causes of urinary retention in the pelvis and ureters, and an accompanying pyelitis, are much less common and important. Calculus, which probably also acts by locally lowering the resistance; malformation of the urinary tract, such as double pelvis, double ureter, and displaced pelvic-ureteric opening; aberrant renal arteries constricting the ureters; tumours of the kidney or pelvis or of adjacent structures pressing on the ureter; inflammation, both within the kidney, such as renal tuberculosis, and outside it, involving the ureters—e.g., with pyosalpinx; and neuromuscular defects leading to inadequate opening of the sphincteric orifices—all these are causes which are met with, and which should be looked for, in cases of pyelitis not otherwise adequately explained. The frequency of ascending infection of the ureters and renal pelvis in obstruction of the bladder due to prostatic enlargement and in diseases of the spinal cord needs no emphasis; the urgency of the bladder symptoms will usually here direct attention to the obstructive lesion. It is in the former group of cases in which obstruction is of ureter and pelvis only that the nature of the underlying lesion is apt to be missed unless the significance of the pyelitis is realised.

The following cases illustrate the desirability of thorough investigation in cases of apparently simple pyelitis:—

CASE 1.—A. B., a male aged 45, when first seen had been under treatment for four years for "pyelitis." He had had various medical treatments including "diet" and vaccines. On examination the left kidney was palpable and slightly tender. Radiography showed faint shadows in the region of the left kidney, presumably due to calcification in pus. Cystoscopy by Mr. Victor Dix showed a normal bladder; indigo-carmine was excreted by the right kidney in 3 minutes, the left showed no colour after 15 minutes. Catheterisation of the left ureter showed that the catheter could not be passed into the pelvis of the kidney. Excretion pyelogram: 20 c.cm. 15 per cent. Abrodil showed a large left pyonephrosis (Fig. III.). Nephrectomy with removal of a large pyonephrosis was carried out, and recovery was uneventful.

CASE 2.—C. D., a female aged 25, was admitted to the London Hospital with pain in the right flank; she had had a rigor the day before admission. The patient was

* A post-graduate lecture at the London Hospital.

three months pregnant, this being her first pregnancy. For two months she had had increasing frequency of micturition. On examination there was tenderness in the region of the right kidney. The urine contained pus and *Bacillus coli* and radiography showed a group of shadows in the right renal region (Fig. IV.). Cystoscopy (indigo-carmine): left, 6 minutes; right, no colour after 10 minutes. Both ureters catheterised: left, normal urine; right, pus and *B. coli*. This patient had never any urinary symptoms before her pregnancy. Two months after delivery Mr. Dix performed a nephrectomy; a grossly damaged kidney with multiple calculi was removed.

CASE 3.—E. F., a female aged 43, was admitted to the London Hospital with pain in the back and frequency. Two weeks before admission she had had a sudden onset of pain in the small of the back, with shivering and headache; there was burning pain on micturition and frequency. The symptoms lessened after three days and she had felt better until the day before admission when she had a similar attack; her doctor had found albuminuria. Fourteen years ago she had influenza followed by "fluid in the chest," she was in Victoria Park Hospital at that time. The patient is married and has one child; she had no urinary disturbance during the pregnancy. Examination showed a furred tongue, fever, and pyuria; it was otherwise negative.

The symptoms cleared rapidly with treatment. A routine intravenous pyelogram showed a conspicuous dilatation at the lower end of the right ureter (Fig. V.). On cystoscopic examination this proved to be a large ureterocele.

CASE 4.—G. H., a girl aged 18, had been under observation since 1927 with recurrent attacks of "pyelitis," in which there was pain in the back, some frequency, and puffiness of the face and ankles in the morning. The urine consistently contained either pus, or numerous leucocytes, and grew *Bacillus coli* on culture. X ray and cystoscopic examination had been carried out in 1931 with negative results. Uroselectan pyelography revealed definite left hydronephrosis and some dilatation, but no deformity of the right pelvis (Fig. VI.). Operation revealed bilateral streptococcal salpingitis, with abscess formation on the left side and an inflammatory mass incorporating the left Fallopian tube and ovary, fixed to the iliac vessels and pelvic wall, and obstructing the left ureter. The whole mass was removed between ligatures.

Above I have described conditions within the urinary tract predisposing to its infection; but it should be remembered that the foci of infection in other parts of the body, such as the appendix and the gall-bladder, may also play a part. This is often emphasised by those writing on pyelitis. In my own experience I have not been impressed with its importance, but it is perhaps not without significance that among the relatively few patients whom I have treated with a ketogenic diet two have shown symptoms suggesting exacerbation of chronic gall-bladder infection.

TREATMENT

The treatment of pyelitis may be conveniently divided into the treatment of the acute condition with relief of symptoms and the treatment of chronic cases and the eradication of the infection. The former is one of the most satisfactory therapeutic procedures we have; the latter unfortunately gives much less good results.

The treatment of the acute condition is extraordinarily simple; it consists in the administration of adequate doses of alkali over a sufficiently prolonged period. The important words in the above sentence are the qualifying ones—"adequate" and "sufficiently prolonged." Over and over again one is asked to see cases of acute pyelitis which are not responding adequately to treatment; almost always this result is due simply to failure to give the drug in sufficient doses for a long enough time. In using alkalis it is the common practice to use a mixture of alkaline salts. This is, I think, a mistake. It is my experience that a single salt is less likely to cause nausea and vomiting than a mixture. I use potassium citrate, grs. 60 in ½ ounce of water with syrup of orange or lemon to flavour. Half an ounce of the above mixture—that is, pot. cit. grs. 60—is given 2-hourly for eight doses and then 4-hourly. If after 36 hours of such treatment the urine is still acid, 2-hourly doses should again be given. When all symptoms have disappeared the alkali may be reduced to three doses in 24 hours, provided this is adequate to maintain the urine alkaline to litmus. A very common error is to discontinue the alkali too early or to substitute for it acid sodium phosphate and hexamine. The administration of alkali should be continued for weeks and should be maintained after the patient is up and about. If nausea or vomiting are induced by the citrate, potassium or sodium acetate, which are equally effective, should be tried: some patients can take the one and not the other. I have personally entirely discarded the use of hexamine in these cases.

With adequate treatment with alkalis the symptoms usually disappear rapidly; the pain goes, the temperature returns to normal, and the pus in the urine diminishes. Occasionally these measures are unsuccessful, and in spite of adequate alkali therapy the pain persists, the temperature remains elevated, and further rigors occur. Such patients are usually very ill and their condition may give rise to anxiety.

Recently, with the assistance of Mr. Dix, I have obtained very successful results in such circumstances by continuous drainage of the renal pelvis through a ureteric catheter. The ureter is catheterised and the catheter passed into the pelvis of the kidney and left in situ for 48–72 hours. The change in the patient is dramatic; the pain is instantly relieved, the temperature quickly falls, and the restlessness and toxic manifestations disappear. We have now treated three patients in this way with uniformly successful results. In the two instances in which we examined the urine obtained from the kidney pelvis by catheterisation we found it acid to litmus, although the bladder urine was, and had been on the previous day, alkaline. Moreover, indigo-carmine injected in one case seven, in the other eight, minutes before the catheterisation had not yet appeared. This suggests that in these patients swelling, or other interference with the pelvic-ureteric opening had occurred, with retention of urine and a resulting rise in pressure within the pelvis of the kidney sufficient to prevent the secretion of urine by that kidney. This failure of the kidney to secrete, and the resulting acidity of the urine is sufficient explanation of the failure of alkalis to relieve symptoms. The immediate relief of pain which follows the introduction of the catheter suggests that the severe pain in these patients is due to the increased pressure within the pelvis. It has been very noticeable that, in each instance after pelvic catheterisation, a prolonged and continuous rapid flow of urine greatly exceeding the normal has resulted. I feel that pelvic drainage by ureteric catheter is a very important addition to our treatment of acute pyelitis; its use will, I believe, result in a disappearance of the case refractory to alkali therapy.

The treatment of chronic pyelitis and the elimination of the infection after an acute attack may be considered together. Unfortunately our methods of treatment are here much less satisfactory. Acute attacks of *B. coli* pyelitis in children usually show complete recovery without relapse and with elimination of the infection. In acute pyelitis of pregnancy, by far the commonest form in the adult, chronic pyelitis, relapsing acute

attacks, and basal cystitis with persistence of *B. coli* in the urine are, on the other hand, so frequent as to be almost the rule. It is probable that this persistence of infection is dependent on inadequate emptying of the pelvis and ureters, due either to mechanical defects or to disturbance in the emptying mechanism due to the chronic inflammation. As yet our methods are inadequate to demonstrate such an effect in most cases, but the frequency of the association of infection with anatomical abnormalities and the relative rarity of infection of the normal pelvis make tenable such an hypothesis.

In the treatment of chronic pyelitis a ketogenic diet has been advocated. On such a diet very rich in fat and very low in carbohydrate, ketone substances are excreted in the urine. These ketones are bactericidal, especially in a highly acid urine. It is usual therefore to give, along with the diet, acid-producing salts such as ammonium chloride or ammonium nitrate in relatively large doses. My own experience with this form of treatment is insufficient to dogmatize. There is no doubt that it often does lead to elimination of the infection—in about half the cases in the experience of most authors. My own experience suggests that the treatment is difficult to carry out without the assistance of a trained dietitian. Even with the assistance of a dietitian I have found it quite inapplicable to out-patient treatment. The diet is trying to most patients and some find it impossible. In two instances I have seen symptoms suggesting an exacerbation of a dormant cholecystitis in patients on the high fat diet. It is probable that when efficiently carried out its success or failure depends on the adequacy of pelvic emptying in the particular case.

Other urinary antiseptics, such as hexamine, neotropine, and hexyl resorcinol, are often employed. I have not had much success with them. Vaccines I have not used and I know of no satisfactory evidence of their efficiency.

Renal lavage with colloidal silver undoubtedly relieves pain in some patients with chronic pyelitis. Occasionally the urinary findings also improve and pus and bacteria may disappear from the urine. It is questionable whether the benefits obtained are due to the substance injected. Not infrequently such patients are equally relieved by the passage of a ureteral catheter or the making of a pyelogram. It may well be that the improvement following renal lavage is due merely to improved drainage resulting from the pelvic catheterisation. Renal lavage should, in my opinion, be done only by the expert. In unskilled hands considerable discomfort and actual damage may result from its use.

The most common sequel of acute and chronic pyelitis is basal cystitis, in which a chronic inflammation with multiple cyst formation is present about the trigone and neck of the bladder. It is this condition which is most often responsible for the persistence, or recurrence, of painful and frequent micturition in patients who have previously had pyelitis. Treatment with alkalis will often give symptomatic relief in this condition, but is also often ineffective. In such patients symptomatic relief is usually obtained by careful local treatment with caustics or cautery. This, like renal lavage, is a treatment to be employed only by those well versed in the technique of cystoscopy, unskilled interference not infrequently resulting in exacerbation of the existing condition.

In conclusion may I again plead for a careful and thorough investigation of all cases of unexplained pyelitis; and for an adequate use of alkalis in the treatment of the acute condition.

A DIRECTOR FOR THE INSERTION OF THE SMITH-PETERSEN NAIL IN COLLUM FEMORIS FRACTURES

By Eric I. Lloyd, M.B. Camb., F.R.C.S. Eng.

ORTHOPÆDIC SURGEON TO THE ROYAL NORTHERN HOSPITAL, LONDON; SURGEON TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET; CONSULTING ORTHOPÆDIST TO THE LONDON COUNTY COUNCIL

This new instrument enables the surgeon to insert a Smith-Petersen nail through a small incision over the great trochanter without the use of wires and without exposure of the fractured neck of the femur. It is an instrument of precision and its setting in each case is determined by X ray photography in two planes of a part of the apparatus (the guide nail) which is first driven into the great trochanter.

This nail relates the apparatus to the bone and becomes temporarily a part of it. Direct measurements are made on the X ray film and subsequently transferred to the apparatus, which is not fixed to the operating table, and is consequently independent of horizon, spirit levels, degrees of internal rotation, or anteversion. The instrument was first made to take Kirschner wires, but it has now been improved so that wires are entirely eliminated from the whole operation.

The guide nail is used as a means of obtaining an exact setting of the instrument for inserting a Smith-Petersen triradiate nail in any direction which the operator desires. It allows sufficiently fine adjustment to aim the nail exactly where it is wanted.

The apparatus, which can be used for either lower limb, is made of stainless steel and consists of a rectangular guide nail 16·0 by 1·0 by 0·5 cm., with a reduced fluted end. A Duralumin tube is connected to this by two sliding arms at right angles to one another and graduated in centimetres. This tube is of such a size that a Smith-Petersen triradiate nail will slide down it and continue on a set course into the bone. In addition to the linear adjustments there are two quadrants marked in degrees whereby the angle of the duralumin tube can be varied in two planes at right angles to one another.

The guide nail is perforated at intervals of 1·0 cm. in two planes; these perforations are visible on the radiograms and provide a standard unit of measurement nearly independent of X ray distortion.

The X ray apparatus should be "shock-proof" and ether anæsthesia avoided. It is probably also a wise precaution to "earth" both the operating table and the X ray apparatus.

Insertion of the guide nail.—The fracture is reduced on an extension table and held fast in the abducted and internally rotated position. The guide nail is then hammered through a stab incision into the surface of the great trochanter at a point about 2·0 cm. below its tip (i.e., towards the feet) and near the middle of its lateral surface. The nail should penetrate the bone far enough to get a firm grip and so avoid all risk of subsequent wobble or rotation. A dip-stick rod is passed alongside the nail to the surface of the bone to measure bone penetration which should be approximately 2·5 cm. In the usual operative position of the limb for reduction of these fractures the nail must be directed approximately at right angles to the general line of the trunk and must be so held that two of its four surfaces look

directly up and down — i.e., towards the ceiling and floor of the operating room.

Radiograms are now taken in two planes at right angles to one another, and if reduction of the fracture is satisfactory the appropriate setting for the instrument is worked out as follows.

Calculating the setting of the instrument. — The surgeon has before him two wet films showing the fracture satisfactorily reduced and showing also the guide nail penetrating the great trochanter. The first of these films (Fig. 1) is the ordinary antero-posterior and the second (Figs. 2, 3, 4, 5) is a lateral of the neck of the femur which is really an infero-internal–supero-external view.

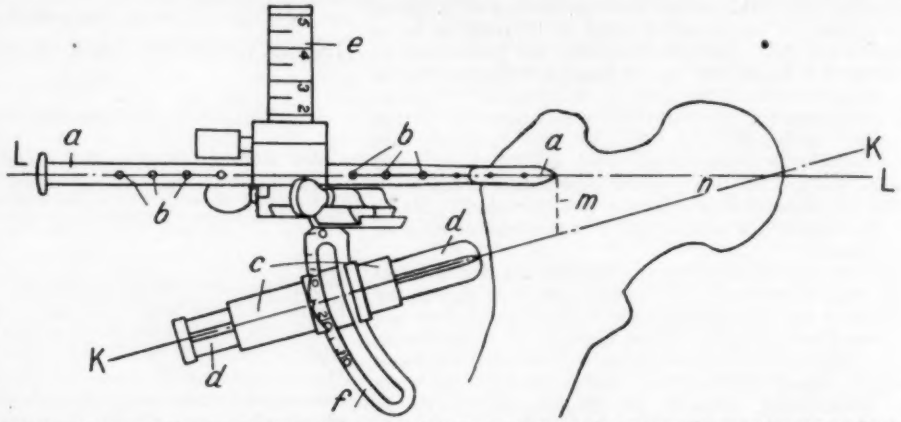
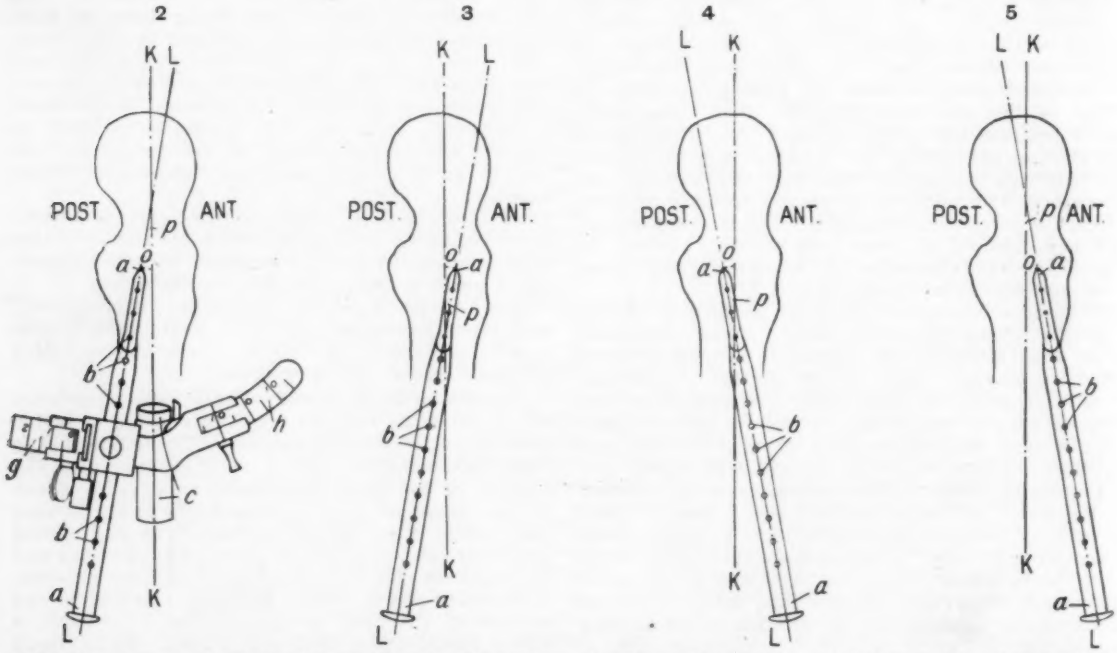


FIG. 1.—Scheme of antero-posterior radiogram with director and Smith-Petersen nail in position. (*a–a*) Guide nail. (*b*) Perforations 1 cm. apart. (*c*) Duralumin tube which sets the course of the Smith-Petersen nail. The setting of the tube is controlled by the four adjustments (*e*), (*f*), (*g*), and (*h*) (see Fig. 2). (*d*) Smith-Petersen triradiate nail in duralumin tube. (*e*) One-way linear adjustment marked in centimetres. (*f*) One-way quadrant marked in degrees from 5°. (*K–K*) Selected line for Smith-Petersen nail. (*L–L*) Projection of line of guide nail. (*m*) Perpendicular from end of guide nail to selected line for Smith-Petersen nail. (*n*) Angle between selected line for Smith-Petersen nail and projection of guide nail.

The antero-posterior film is held to the light and a straight line (Fig. 1, *K–K*) is drawn upon it where the operator wishes to place the triradiate nail. The guide nail is then projected on the X ray film (Fig. 1, *L–L*) until it meets this, and a line (Fig. 1, *m*) is drawn at right angles to the guide nail from its point to meet the line (Fig. 1, *K–K*) selected for the Smith-Petersen nail. The length of this perpendicular in centimetres is obtained by comparison with the photographed perforations in the guide nail which are known to be 1 cm. apart. This figure gives the downward (towards the feet) adjustment necessary on the linear scale (*e*). In order to obtain the correct setting for the quadrant (*f*) it is only necessary to measure the angle (Fig. 1, *n*) between these two lines *L–L* and *K–K*.

The lateral X ray film (Fig. 2) is then examined and the same two measurements obtained—viz., correct settings for the linear scale (*g*) in centimetres and for the quadrant (*h*) in degrees.

There is a difference between the two sets of



FIGS. 2–5.—Scheme of lateral radiogram: four possible positions of guide nail (see text). (*a–a*) Guide nail. (*b*) Perforations 1 cm. apart. (*c*) Duralumin tube which sets the course of the Smith-Petersen nail. The setting of the tube is controlled by the four adjustments (*e*), (*f*) (see Fig. 1), (*g*), and (*h*). (*g*) Two-way linear adjustment marked forward and backward in centimetres from 0 cm. (*h*) Two-way quadrant marked forward and backward in degrees from 0°. (*K–K*) Line drawn in position selected for Smith-Petersen nail. (*L–L*) Line of guide nail. (*o*) Perpendicular from end of guide nail to selected line for Smith-Petersen nail. (*p*) Angle between selected line for Smith-Petersen nail and guide nail projection.

readings inasmuch as the first two adjustments can only be made in one direction, and the second pair can each be made in one of two directions. This is because an essential step in the introduction of the guide nail is to insert it into the trochanter above the point at which the Smith-Petersen nail is to enter and in such a way that it makes an acute angle with the line of the neck of the femur. This is perfectly simple if the instructions already given under "insertion of the guide nail" are followed. To put the matter in another way, the two adjustments obtained from the lateral X ray photograph can be made on either side of the zero mark, but the apparatus is so constructed that zero in the coronal plane is at one end of the scale and adjustments are only possible in one direction, beginning at 1 cm., on the linear scale (*e*) and 5° on the quadrant (*f*).

It is therefore important to mark the lateral X ray photograph in order to avoid any possibility of confusion between the anterior and posterior surfaces of the femur.

Fig. 1 illustrates the setting of the instrument obtained from the antero-posterior X ray photograph—e.g., 1·8 cm. (Fig. 1, *m*) 16° (Fig. 1, *n*).

Figs. 2, 3, 4, and 5 show four possible positions in the lateral X ray photograph. The readings in each of these examples should be as follows:—

From Fig. 2	..	0·5 cm. forward (0);	10° forward (p.).
From Fig. 3	..	0·5 cm. backward (0);	10° forward (p.).
From Fig. 4	..	0·5 cm. forward (0);	10° backward (p.).
From Fig. 5	..	0·5 cm. backward (0);	10° backward (p.).

These adjustments are made on the instrument as it is slid into position on the guide nail.

Choosing the nail.—It is important to use a nail of the right length. My set at present consists of seven nails varying in length from 10 cm. to 7 cm., with 0·5 cm. difference between each consecutive pair. The length is that of the nail, excluding the head, since that does not enter the bone. The length of each nail is engraved on the outer side of the head.

The line drawn on the antero-posterior radiogram to represent the path of the triradiate nail is now measured in terms of the photographed perforations on the guide nail and the correct length of nail thus ascertained. The selected nail should as a general rule be a little shorter than the calculated length, otherwise it may partly emerge from the hemispherical head of the femur which is only shown in outline on the X ray film. In subcapital fractures it may be necessary to deduct for operative impaction and to add for nail obliquity, but in the transcervical group this is probably unnecessary because the greater size of the proximal fragment gives a greater margin of safety.

The nail starter.—A special nail starter is used to start a track for the Smith-Petersen nail which might otherwise be deflected from the correct course by one of its three fins encountering bone before the other two. A 3 cm. incision is now made in the long axis of the limb through the correctly adjusted duralumin tube; the starter is passed through the tube and tapped into the bone for about 4 mm and then removed.

The insertion of the nail.—The selected nail is then passed down the duralumin tube and tapped into the bone with a hammer and punch. When it is estimated to have entered the bone for about 3 cm. fresh antero-posterior and lateral radiograms are taken to check the procedure and the nail is then hammered home. The apparatus is now removed, the extension released, and the fracture impacted by a few heavy blows on the great trochanter with an impactor of Smith-Petersen's type. Final X ray photographs are taken and the wound is then closed in two layers (generally without drainage) and dressings applied.

NOTE

Certain relevant matters have been purposely omitted from this paper which it is hoped to supplement later. Amongst these important points are the following: (1) Results obtained by the method. (2) Choice of anæsthetic. (3) X ray technique. (4) Experience with a large nail instead of the usual 13 mm. diameter. The accuracy of the director makes this quite feasible but the large nail has been used on one occasion only. The standard size of Smith-Petersen triradiate nail has been used in all the other operations.

The brotherhood of medicine knows no boundaries, and I gladly own my debt to the writings of Smith-Petersen of Boston, Böhler of Vienna, King of Melbourne, Brocq and Dulot of Paris, and Burns of London, but above all to Sven Johansson of Gothenburg, whose admirable work on "Collum Femoris Fractures" has set a new standard of achievement in these difficult cases.

This instrument has been made to my requirements by the Medical Supply Association of 167, Gray's Inn-road, London, W.C.1, and I wish to acknowledge the help of the managing director, Dr. G. E. Greville, and his assistant, Mr. F. C. Hickman, as well as that of the radiographic staff of more than one hospital.

Clinical and Laboratory Notes

AN UNUSUAL INFECTION OF THE ANTRUM, OF DENTAL ORIGIN

By E. C. N. Strong, F.R.C.S. Eng., L.D.S.
EAR AND THROAT SURGEON, BIRMINGHAM MUNICIPAL HOSPITALS; AND
I. B. Barclay, M.R.C.S. Eng., D.M.R.E., D.P.H.
RADIOLOGIST, SELLY OAK HOSPITAL, BIRMINGHAM

(WITH ILLUSTRATIONS ON PLATE)

A boy, aged 15, was admitted to the Selly Oak Hospital on March 5th, 1935, with symptoms of nasal sinusitis over a period of twelve months. They were said to have started soon after an attack of toothache in the left central upper tooth.

On admission he had pus in the middle meatus of his nose of the left side, the right being practically clear. On transillumination the left antrum was dim; radiographic investigation (Fig. I. on Plate) showed definite abnormality in this antrum. It was decided, on account of posterior nasal discharge, to wash out his sinuses by the Watson-Williams method. This was done, with the result that mucus only was found in both ethmoids; the right antrum was clean and the left contained pus, which on culture grew streptococci. There was no indication in his nose of any other pathological condition, except that localised in his left antrum. Five days after this was done he complained of pain in the left side of his face, which was slightly swollen. Nasal examination was negative, but he had a tender left upper central, which contained a temporary filling, said to have been put in six months previously. This tooth was painful and was loose; it was therefore decided to extract this, as the condition was a dental one. On examination of the tooth it was found that the root-filling material had passed through the apex into the alveolus, and was surrounded by an area of granulation tissue (Fig. II.). Radiological evidence indicated that the tooth pulp had been removed, and that a radio-opaque substance had been put in as a root-filling, clearly

passing through the apex. In view of this latter condition, an occlusal film was taken (Fig. III.), which showed an area of rarefied bone spreading up into the floor of the antrum of the same side. After this tooth had been extracted the condition subsided, and subsequent lavage of the antrum proved clear. The patient left hospital on March 26th with no further symptoms.

This case is put forward for two reasons: firstly, it is suggested that the condition was an antral suppuration of dental origin, arising from a central incisor (an unusual occurrence); secondly, that undoubtedly the apex of this tooth was septic and was root-filled. Whether the root-filling had, in passing through the apex, spread the infection, or whether there was a pre-existing antral infection before the dental treatment, is open to doubt, but events after treatment show that the two were correlated, and it was, in fact, a direct extension from the tooth socket to the antrum floor. The fact that the ethmoidal cells of the same side were devoid of any pathological condition also suggests that the antrum infection was of dental origin. Normally, it is very common to find an ethmoiditis and an antritis, the usual sequelæ of a primary nasal pansinusitis.

The floor of the maxillary sinus is formed by the alveolar process of the maxilla, the thickness of the floor depending upon the degree of hollowing-out of this process. Where this hollowing-out is very pronounced, the floor must bear an important relation to some of the teeth and their sockets, and may even contain irregular elevations corresponding to the roots of the teeth. Such relationship depends upon the thickness of the layer of spongy bone, which varies much in different skulls, and even on the two sides of the same skull. Bony septa, varying in height and thickness and dividing the floor into pockets, often traverse the floor of the sinus; since the maxillary sinus varies greatly in size, and even on the two sides of the same skull, it is obvious that the relation of the teeth to the sinus can never be exactly constant. When the layer of spongy bone along the floor of the sinus is thin—i.e., when the maxilla is markedly hollowed out—the floor is at a lower level than the floor of the nose; if the alveolar process is comparatively thick, the floor of the nose is at a lower level than the floor of the sinus. Resschreiter states that it is a male characteristic for the sinus floor to be inferior to the nasal floor, but other observers have been unable to verify this observation.

In general terms the maxillary sinus varies greatly in size, shape, and positions, not only in different individuals, but in each side of the same individual; it does not attain its maximum size until the third decade of life, and thereafter appears to remain stationary. The base of the sinus is extremely variable, and no definite information as to its constant size and shape can be given. It is therefore obvious that when a radiographic study of the canine and bicuspid teeth has to be made, with reference to the maxillary sinus, it is essential that the floor of the sinus should be clearly delineated. Our experience has been that this can only be satisfactorily carried out with the patient in the upright position. Frequently stereoscopic examination is extremely helpful.

The teeth most often involved in antral sepsis are the molars and bicuspids, but it is possible that the canine and also, as is shown, the central, can be the cause of sepsis in this sinus; this is almost entirely due to the anatomical configuration of its outer and front wall. In this case the inflammatory condition is liable to spread towards the ascending process of the superior maxilla, rather than to run along the cancellous tissue of the antral floor.

We are indebted to Dr. S. Robinson, pathologist to Selly Oak Hospital, for her investigation of the bacteriology of this case.

FATAL POISONING CAUSED BY MORPHINE IN A PROPRIETARY REMEDY

BY ARNOLD RENSHAW, M.D. Lond., D.P.H.

DIRECTOR OF THE LABORATORY OF APPLIED PATHOLOGY AND PREVENTIVE MEDICINE, AND HON. PATHOLOGIST TO ANCOATS HOSPITAL, MANCHESTER

I HAVE never heard of an infant succumbing to a dose of morphine so small as that given in the following case.

The weight at birth was 6¼ lb. On Oct. 30th, 1934, when the child was eleven days old, the mother, in view of supposed constipation, gave it in the milk feed a few drops of a proprietary remedy called Cherub's Balm. On Nov. 1st, at 3 A.M., a further dose of one teaspoonful was given, after which the child cried for a time and then slept. It was still asleep when the family practitioner (Dr. H. Tomlinson) called in the morning, but the mother did not mention that medicine had been given. At 6 P.M. the mother asked the doctor to call again, but the child died at 8 o'clock without regaining consciousness.

Autopsy.—I carried out a post-mortem examination. The body showed lividity of the ears and the nails of fingers and toes, but no signs of violence. The pupils were not contracted but not fully dilated, measuring 4 mm. in diameter. Tardieu spots were found on the surface of the left ventricle at the junction of interventricular septum, with small ecchymoses (2–3 mm. in diameter on arch of aorta), fullness of the right auricle, and congestion of both lungs, with mucus in the trachea. The small intestine was congested for about 6 feet from the pylorus, and the thymus was large though not too large for the age of the infant. The meninges were intensely congested, particularly over the vault; the spinal canal and other organs appeared normal. About 2 c.cm. of urine was withdrawn from the bladder with a syringe and submitted to analysis, together with the stomach, stomach contents, duodenum with contents, small and large intestines with contents, liver, kidneys. I also sent for examination the spoon used to measure the dose administered, the bottle containing the rest of the Cherub's Balm, and three articles of clothing, and suggested that morphine be specially sought for. These analyses were carried out by Mr. G. D. Elsdon, Lancashire county analyst.

Histological examination.—Section of the lung shows congestion of blood-vessels and in places desquamation of the alveolar epithelium. There is no evidence of pneumonia or broncho-pneumonia to account for death, and there is no pleurisy. Section through one of the areas of discoloration in the heart shows a small extravasation of blood amongst the muscle-fibres, constituting the so-called Tardieu spot, met with in asphyxia. The muscle-fibres seem normal otherwise, though the strands of muscle are somewhat widely separated from each other. The meninges of the brain are congested but there is no evidence of pus-formation in the brain or on the meninges. The thymus is also congested, but otherwise normal. These findings would accord with death from asphyxia.

Chemical analysis.—The amount of Cherub's Balm in the bottle was 33 c.cm. (1 fluid ounce = 28·4 c.cm.) and the liquid has been found to contain 0·006 per cent. of anhydrous morphine. When full the bottle would contain about 43 c.cm., so that an amount not exceeding 10 c.cm. may have been removed. The volume of the spoon supplied is 2·5 c.cm. The quantity of anhydrous morphine in the liquid remaining in the bottle was 2 mg. (1 mg. = gr. 1/65). The amount in the bottle when full would be 2·6 mg., and the amount in one dose of the

teaspoon used would be 0·15 mg. The stomach, stomach contents, and duodenum proved to be free from morphine. The kidneys and urine contained not more than 0·02 mg., and the liver about the same quantity; in the intestines and their contents there was about 0·1 mg. From these findings it was concluded that more than 0·15 mg. of morphine was administered, but that some of this had passed into the blood stream.

Cause of death.—At the inquest I gave my opinion that death was due to asphyxia not caused by mechanical violence, but by morphine poisoning. A verdict of death by misadventure was returned.

Cases have been reported in which quantities of the order 0·5 mg. morphine have resulted in the death of very young children. Thus E. Smith [1] describes a case in which opium gr. 1/20 (= 3·3 mg. opium=0·33 mg. morphine) caused the death of an infant 16 days old. A. and M. Winter Blyth [2] state that cases are recorded of infants dying from extremely small doses of opium—e.g., 0·7, 4·3, and 8·1 mg. (1/90, 1/15, and ⅛ of a grain)—but in such instances one cannot help suspecting some mistake. It may be conceded, they add, that a very small quantity might be fatal to infants, and that 3 mg. (0·3 mg. of morphine) given to a child under one year would probably produce serious symptoms.

In the present case it is to be noted that although the bottle when full would contain 2·6 mg. of anhydrous morphine, only 2 mg. was found left in the bottle. The dose however was given by candlelight, and the mother in evidence stated that she had knocked over the bottle and that some had escaped in this way. It can be assumed therefore that at least 0·15 mg. was administered but possibly less than 0·3 mg., of which 0·14 mg. was recovered from the stomach, duodenum, large and small intestines, liver, kidneys, and urine. In evidence at the inquest the manufacturer stated that he thought the medicine was safe and that he had heard of children drinking out of the bottle; he further stated that the morphine content was not ascertained by analysis. Accepting 0·5 mg. as a known lethal dose and 0·3 mg. or less as the dose given in this case, the bottle would contain 5–8 times the known minimum lethal dose. In view of the known idiosyncrasy of young children to morphine and the variable composition of syrup of poppies used in the medicine I offer the following suggestions.

1. All such preparations should be analysed for morphine content and a log book kept of all batches made and sold.

2. All such preparations should be sold only under Schedule 1 of the Poisons and Pharmacy Act, 1908, and the same description should be applied as is at present applicable under the Ireland Schedule (Part II.). Thus the present schedule exempts any preparation containing less than 0·2 per cent. morphine from Part I. of the schedule, whereas Part II. of the Ireland Schedule includes "Opium and all preparation of opium or poppies." Since the present medicine which contained only 0·006 per cent. morphine was able to cause death it is obviously possible for an unscrupulous person to encompass the death of an infant by the free use of preparations containing much less than the specified amount of morphine without any register of the sale of such a product being available.

3. The inspection of premises and records of all such manufactured products should be made possible by amending the Dangerous Drugs Acts, 1920, 1923, 1925, in such a way as to alter the amount of morphine from 0·2 per cent. to much less in amount before premises come within the purview of these Acts.

I am aware that this case may be an isolated one; on the other hand, others may not have been recognised, through suppression of information.

I wish to thank Mr. R. M. Barlow, the coroner, for permission to report these facts, and Mr. G. D. Elsdon for allowing me to give his chemical results.

[1] Smith, E.: Amer. Jour. Med. Sci., 1854, liv., 381, quoted by Peterson, Haines, and Webster, Legal Medicine and Toxicology, 2nd edition, London and Philadelphia, vol. ii., p. 523.

[2] Blyth, A. W., and Blyth, M. W.: Poisons, their Effects and Detection, 5th edition, London, p. 294.

A CASE OF LEOPARD BITE

WITH A NOTE ON CLAW MARKS

By James Walker, M.B. Glasg., D.P.H.

MEDICAL OFFICER, BEBIANIHA, GOLD COAST

On Jan. 7th, 1935, a Sefwi hunter was brought to the African hospital belonging to Bibiani (1927) Ltd. suffering from injuries inflicted by a leopard. Either by accident or bad shooting, he had hit the creature near the tail, so angering it that it turned on him and pulled him down, worrying him till two other hunters killed it. His left arm just above the wrist was bitten through, both bones being crushed. Both his arms were clawed extensively, and a fang had passed right through the inner side of the right orbital fossa to the floor of the skull, missing the eyeball. An unusual feature of the case was that a bite in the throat had pierced the trachea in such a manner as to leave a valve which caused air to be pumped into the tissues of the neck and face, producing conspicuous surgical emphysema. The patient was conscious, and his breathing obstructed and difficult; so I opened up the wound so far as was necessary to allow of easy respirations, and for some three hours he was comfortable. Then he announced he was going to die and did so.

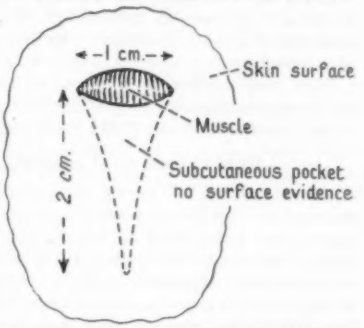


Diagram showing the gaping wound in the skin (through which muscle is visible), and the long subcutaneous pocket, not at first evident, made by the leopard's curved claw.

The accompanying diagram shows a type of claw mark seen on the right arm. These lesions were roughly half-moon-shaped and looked deceptively clean-cut and shallow, but in addition to the obvious wound there were conical pockets running well under what looked like sound skin, following the curves of the animal's claws. This multiple pocketing, if overlooked, would give every chance to the tetanus bacillus and other bacteria. It is caused by the animal *holding* the limb, without tearing it, and differs from the rending wounds.

THE LATE MR. H. JOHNSON.—The death of Mr. Harry Johnson, house governor and secretary of the Leicester Royal Infirmary on July 14th, is announced. Mr. Johnson had held this position for 31 years, and during his long service for the hospital had seen it expand from an institution with 226 beds to one with 486 beds and 92 convalescent beds. He was a member of the British Hospitals Association, and took an active part in the deliberations of the East Midland Regional branch.

MEDICAL SOCIETIES

BRITISH SOCIAL HYGIENE COUNCIL

IMPERIAL CONGRESS

THE seventh Imperial Social Hygiene Congress was held at the London School of Hygiene and Tropical Medicine from July 8th to 12th, under the presidency of Sir BASIL BLACKETT.

The subject of the first discussion was recent efforts of the League of Nations in the fight against traffic in women. Mr. E. E. EKSTRAND opened the meeting with a paper reviewing the work of the League, which had, he said, definitely coördinated the efforts of the different countries. The League Council had come to the conclusion that the abolition of licensed houses was an essential step, but that it must be accompanied by careful measures of rehabilitation,

A number of speakers from various parts of the world contributed papers to another session on the welfare of the mercantile marine and social conditions in ports. Pre- and post-marriage problems and the best methods of teaching biology and hygiene were also discussed.

The two medical sessions dealt with the treatment of venereal disease at the present day, and with the relationship between yaws and syphilis.

Treatment of Venereal Disease

At the first of these discussions the chair was taken by Sir FARQUHAR BUZZARD and the opening paper was read by Col. L. W. HARRISON, who dealt with the recent advances in treatment and also the working of venereal disease schemes in England and Wales. Judging by the annual returns from the treatment centres, he said, no impression had been made on the incidence of gonorrhœa. On the other hand, it had never been believed that these figures really represented the number of cases in the general population; they reflected the popularity of the centres and the public appreciation of the seriousness of the disease. Far too few women were seen in the centres. More use, he thought, might be made of blood tests; the complement-fixation test for gonorrhœa had been made wonderfully sensitive and specific. A routine blood test would bring to light many cases not otherwise revealed. The most important advance in treatment had been the production of hyperpyrexia, the gonococcus being very sensitive to temperatures which could be tolerated by human tissues. Diathermy had provided a method of producing controlled temperatures which could be stopped at once if the patient were having too much. The usual routine was to enclose the patient's body in a Kettering hypertherm, through which conditioned air was pumped so that the temperature was kept between 106° and 107° for about six hours. Of 25 cases reported recently from the Mayo Clinic, 9 had been cured by one treatment, 4 by two treatments, and 3 by three treatments. It was important to recognise vaginitis due to the *Trichomonas vaginalis*, which might be mistaken for gonorrhœa and which seemed to be on the increase. It resisted all treatment except the application of Devegan. A similar condition might be found in the male urethra. Greater discrimination had been achieved in the soft chancre field. There were also some obstinate rectal inflammations, ranging from esthiomene to proctitis. It was important to apply skin tests at once to such cases. Intravenous Dmelcos was a useful form of treatment. If the condition did not yield to this and local applications, it was as well to think of granuloma inguinale and to give the specific antimony.

There had been a substantial and real decline in syphilis, and this disease was not being transmitted as freely as it used to be. The Ministry of Health Circular No. 1474 was a useful publication for all concerned with this work. The League of Nations had issued recommendations on the treatment of early syphilis which were likely to lead to a decided improvement. The recommendations had been based on an analysis of 13,000 patients in the primary and secondary stages. The treatment of merchant seamen who moved about from place to place was unsatisfactory, but the Office Internationale d'Hygiène publique were taking the matter up.

In the course of the subsequent discussion, the importance of taking rectal smears was urged; proctitis was often associated with vaginitis and no doubt accounted for many of the relapses. The head of the department of medical hygiene in Victoria (Dr. E. BRITTEN JONES) mentioned the fall in the number of cases of general paralysis of the insane in that State, and said that attention was being paid to the problem of mental deficiency in its relation to syphilis. He described a case of primary chancre of the lip treated by induced malaria alone, with apparent success. Mrs. A. E. WHEATEN (Adelaide) urged the establishment of an international dossier for every syphilitic treated, so that clinics to which he went subsequently could see exactly what had been done from the very first.

A report on the recent work of the Edinburgh venereal diseases clinic was submitted by Dr R. C. L. BATCHELOR. The Kline test had been studied; it seemed to be less reliable than the Wassermann in the earlier stages, but useful in assessing the result of treatment. He urged the establishment of a central bureau of information for malarial therapy. An attempt had been made to assess the influence of unemployment on the spread of venereal disease, but the sapping of physical and moral fibre seemed to be balanced by the organisation of clubs and other measures to help the unemployed. The measures designed to prevent ophthalmia neonatorum had not been completely successful, and practitioners, final-year students, and nurses might be circularised on the subject with advantage.

Major JEHAL SHAH (Bombay) submitted a paper on the treatment of acute gonococcal epididymitis, in which he emphasised the importance of adequate routine treatment to prevent resulting disability. The condition might be caused by the use of strong solutions or a reservoir placed too high when giving posterior irrigation for urethritis. Diathermy was of great value, and a few intramuscular injections of contramine at the proper time would facilitate results and minimise the risk of sterility. Daily intravenous injections of mercury cyanide and vaccines were also of great value.

Yaws and Syphilis

At the second medical session the chair was taken by Dr. HUGH STANNUS, who said that the problem of yaws and its relationship to syphilis was one of great magnitude. Most of those working in countries where yaws was common had little knowledge of syphilis, and vice versa, and as a result much confusion had arisen. Yaws was a far less serious affliction than syphilis: the primary sore was usually extragenital; the mucous membranes

were not affected; itching was common and alopecia unknown. Yaws was never congenital, nor did it ever affect the eyes, viscera, nerves, or arterial systems. The conditions which favoured the spread of yaws and syphilis were not mutually exclusive. Yaws was a disease of the bush, and syphilis of the towns. Yaws did not protect from syphilis. In syphilis immunity appeared in six weeks; in yaws not for about six months.

Dr. P. H. MANSON-BAHR discussed the problem from the ecological standpoint. He did not adhere to the fixed idea that the two conditions were definitely separable. Anomalies of evolution were found throughout animal life, and were probably equally common among microbes. He suggested that yaws might represent a primitive form of syphilis among primitive people. With the advance of civilisation and clothing, contact inoculation became impossible, so that a strain of spirochæte evolved which could be conveyed by sexual contact. An analogy might be drawn with the relapsing fever spirochætes: organisms morphologically identical were transmitted through distinct arthropods to produce distinct clinical forms of the disease. In the tick-borne type there were marked neurotropic tendencies, which were not found in the louse-borne disease. The louse-borne forms seemed to be particularly amenable to salvarsan, to which the tick-borne types were resistant. There seemed no doubt that in the future it would be possible in the laboratory to convert one species of typhus virus into the other, and, if this could be done, there was no insuperable difficulty in the supposition that the spirochætes of yaws and syphilis might be interchangeable.

Major G. J. KEENE contributed his experience from Uganda, and said that there was much controversy and variety of opinion as to the differential diagnosis. It was important to know which was which, because of the great difference in treatment, in gravity of the disease, and in the cost of a large-scale campaign.

Social Hygiene in the Empire

In the course of the discussion on social hygiene problems within the Empire, papers were submitted by Dr. P. J. Kelly and Dr. B. E. Washburn respectively on the venereal disease problems of British Guiana and Jamaica. Dr. KELLY said that public opinion had definitely been aroused, but financial depression had held up schemes for treatment centres. In British Guiana, free treatment was confined to the principal clinic in Georgetown and subsidiary clinics at the county hospitals, but in the Windward Isles free treatment was available for all. The chief problems to be surmounted were ignorance, defaulters, continuous migrations in search of work, the prevalence of endemic yaws complicating statistics, and the great variety of races and cultures inhabiting the country. Dr. WASHBURN said that in Jamaica 10,600 patients had been treated during 1933 at the twenty public hospitals where free treatment was available. There was a regular scheme for health education and infant welfare. There was, however, no reliable information as to the incidence of venereal diseases in the island. Syphilis did not seem to be very prevalent. Many patients with gonorrhoea did not seek medical aid but, however widespread the disease was, it did not seem to cause crippling and serious trouble as it did in other places. Dr. L. J. Lemieux, adjutant-general for Quebec, presented a paper by Dr. A. S. DESLOGES on the provisions for dealing with venereal disease in the Province of Quebec. The educational campaign had, he said, resulted in a great increase of early cases, and an enormous amount of work was being done to combat syphilis and gonorrhoea.

The problem of the social worker in the venereal diseases clinic was discussed by Miss M. D. HEARN, assistant Lady almoner at St. Thomas's Hospital, at a session dealing with social services for women and children. The aim of the almoner, she said, was to establish friendly relations at the earliest possible moment, and many patients had told her that "they had not expected anyone to be kind to them in such a place." Many of the patients needed help in making readjustments to life. The diseases treated in these clinics had more social implications than any others, and an almoner was more urgently necessary than in any other department.

REVIEWS AND NOTICES OF BOOKS

Diseases of the Endocrine Glands

Third edition. By HERMANN ZONDEK, M.D. Berlin, Director of the Medical Division, Bikur Cholim Hospital, Jerusalem. London: Edward Arnold and Co. 1935. Pp. 492. 40*s*.

THE book is divided into two main parts. The first comprises a general survey of the functions of the endocrine system. Hormones are defined and their mode of action and inter-relationship explained. The physiology and chemistry of each hormonal gland is then studied separately; the comprehensive list of such glands including the thyroid, parathyroid, thymus, pituitary, sex glands, adrenal, pancreas, spleen, liver, hormones, pineal body, and carotid body; the so-called cardiac and circulatory are also discussed. The relationship between the hormones and vitamins, vegetative and cen'ral nervous systems, provide further chapters, and Part 1 of the book finishes with methods for the examination of patients for endocrine diseases. Part 2 is confined to a study of diseases or clinical entities associated with endocrine imbalance and each disease is treated separately. There are 22 chapters on Graves' disease, myxœdema, tetany, obesity, gigantism, dwarfism, osteitis fibrosa, hyperinsulinism, and so forth; in respect of each disease pathogenesis, etiology, symptomatology, and treatment receive full attention. A complete bibliography is given at the end and the references are grouped under the various chapters. Many illustrations, photographs, and charts further enhance the value of this work. Dr. Zondek has not tried to supply a compendium of physiological data, but rather to provide the clinician with a detailed study of the endocrine disorders. He has succeeded admirably. It is a stimulating work and deals impartially with old-established theories and recent views. Graves' disease is studied very fully, in exceptional detail. Dr. Zondek's work on this subject is already well-known; he has permitted himself to make certain definite statements on matters which are highly controversial—for example, that toxic cases without goitre respond better to potassium iodide alone than to Lugol's solution, and that digitalis does no good and may do definite harm to the heart in Graves' disease.

No small share of the credit for the production of this excellent book is due to the translator Dr. Carl Prausnitz.

Principles and Practice of Urology

By FRANK HINMAN, M.D., Clinical Professor of Urology, University of California Medical School. London and Philadelphia: W. B. Saunders Co., Ltd. 1935. Pp. 1111. 45*s*.

THE output of urological text-books by American authors continues; at least one new one seems to appear every year. In the preface to this latest addition to the American urological library an explanation of the multiplicity of American works on this subject is given. According to Prof. Hinman at least 40 per cent. of American medical graduates become specialists and another 40 per cent. of those who enter general practice give particular attention to one branch of medicine; since urology has now become an important specialty a large number of American practitioners are whole-hearted or half-hearted urologists.

Hinman's text-book differs in many respects from its predecessors, more especially in the prominence given to comparative anatomy, physiology, and pathology. The reason for his preoccupation with these subjects is the author's conviction that "the fundamental principles of urogenital practice are based primarily on anatomical conditions," and therefore can only be understood by one with an accurate knowledge of anatomy, including under this heading comparative anatomy and embryology. Unfortunately this attitude has involved the sacrifice of other matter of even greater importance to the practising urologist. After all, it is on the skill of his treatment that his success will depend, and in this work practical details of treatment have been badly scamped. It is of far greater importance to a surgeon to learn when a nephrectomy must be carried out and the best method of doing it, than to have a theoretical knowledge of the excretory apparatus of the fish. The paucity of space given to treatment is the more regrettable since the author is well known in the world of clinical urology and is one whose opinion on matters of practical importance would carry considerable weight. Even when these opinions run counter to those held by most experts they are stamped to carry the weight of wide practical experience. In spite of the shortcomings noted, this work contains a vast amount of interesting material, and provides a valuable supplement to other books of a more practical nature.

Krebs und Vererbung

By Prof. Dr. HANS R. SCHINZ and Dr. FRANZ BUSCHKE (Zürich). Leipzig: Georg Thieme. 1935. Pp. 280. R.M.21.

IN this book the authors have collected the numerous observations, scattered throughout the literature, which bear on the hereditary factors in cancer. They approach the subject from the point of view formulated by one of them (H. R. Schinz) in 1928 that cancer is a somatic mutation. The book begins therefore with a brief account of the gene theory of inheritance, which applies to mutations occurring in the germ-cells. The genetics of the incidence of tumours in such animals as drosophila, the mouse and the rat, and in man are then discussed. This section is followed by one on genetic factors determining the transplantability of tumours. The authors then deal with the experimental production of malignant tumours in animals and with the corresponding clinical phenomenon, occupational cancer in man, and they discuss the interaction of the two factors which determine the onset of cancer—namely, the extrinsic factor of chronic stimulation and the intrinsic factor of the genetic constitution. In this section reference is made to the filtrable fowl tumours. They do not readily fit into the picture of cancer as a somatic mutation, and these tumours are dismissed briefly in a page and a half by the suggestion that the filtrable agent is not a virus but a chemical substance. But even if one accepts that view it would have been of interest to know the arguments which would support the conception of chemical substances capable of producing in somatic cells immediately and without fail different specific mutations, all of which have in common that they confer upon the somatic cell the property of malignancy.

The least satisfactory part of the book are the statistical considerations of the incidence of cancer in man, which are based on the cancer mortality in the town of Zürich. A town of 250,000 inhabitants with a total cancer mortality of only 400 persons per annum can hardly yield suitable statistical material on which to discuss the incidence of cancer. The fact that the cancer mortality increases with age was surely known before 1932 when Schinz and Senti demonstrated this phenomenon also for Zürich. In speaking of an age disposition for cancer the authors do not even consider the view now held by many students of the cancer problem that the increase in the incidence of cancer with increasing age is not due to a special disposition of the aged organism for the development of malignancy, but rather to the long period of time necessary to induce cancer. No reference is made to the extensive work of von Pirquet where differences in the age-incidence of the various organs are discussed.

These are minor blemishes. Not only does the book contain a mass of interesting observations, but these have been well and clearly arranged and they are illustrated by 160 well-reproduced figures and diagrams, and there is a bibliography of 20 pages. If the book converts many readers to the view that cancer is a somatic mutation, it will also convince them that this conception is very far from being a short cut to the solution of the cancer problem.

A Manual of the Practice of Medicine

Thirteenth edition. By A. A. STEVENS, M.D., formerly Professor of Applied Therapeutics in the University of Pennsylvania. London: W. B. Saunders Co., Ltd. 1934. Pp. 685. 16*s*.

Stevens's Manual of Medicine is well known and popular in this country. His new edition appears six years after the last, and has additions which bring it fully up to date. For so small a book it is indeed remarkably complete, and though it makes no pretence to be more than a student's handbook, it must be regarded as an unusually comprehensive one. Stevens's medicine has certain advantages not always shared by the smaller text-books of medicine. The student who reads it well is less likely to put the rare causes first and to lose his sense of proportion, or to deprecate the importance of clinical observation than one who pins his faith to some of the other manuals, and he may even be inspired to seek fuller knowledge from another source. It is almost impossible for a teacher to express his personality in such a book as this, but so far as this can be done, Dr. Stevens has succeeded. His style is clear and concise; the arrangement of the book is good and the cross-references accurate; the

index might perhaps be a little fuller. Treatment is given a prominent place, and a large number of prescriptions are included. This little book will continue to be welcomed by the student, and need not be despised by those who have satisfied the examiners.

Health, and a Changing Civilisation

By E. OBERMER, M.D. London: John Lane, The Bodley Head, Ltd. 1935. Pp. 171. 3*s*. 6*d*.

THIS book is written for the general public, but it is very largely about the present form of medical practice, its preoccupation with disease and its failure, so far, to apply physiological knowledge to the promotion of individual health. The author holds that the human race has not adapted itself to a rapidly changing civilisation, and that the individual man is therefore less healthy than he was. It cannot be said that he attempts to prove this basic contention, but he finds its physiological explanation in imbalance of the neuro-endocrine-circulatory system. Changes in medical education, medical practice, and the public attitude to medicine are advocated, and a plan for an individual health service is outlined. It is only fair to add that the author does not expect these changes to be brought about quickly, but he hardly seems to realise the extent to which the public health service—in his view an organisation merely for preventing disease—is ready to absorb and utilise such knowledge as is available for promoting vigorous health, and the extent to which it is ready to contribute to investigation in such matters. The book is written with enthusiasm, and expresses a point of view which is not uncommon among those younger members of the profession who are dissatisfied with present-day medicine.

Insomnia and other Disturbances of Sleep

By EMANUEL MILLER, M.A. Cantab., M.R.C.S., L.R.C.P., D.P.M., Psychiatrist, West End Hospital for Nervous Diseases; Physician, Institute of Medical Psychology; Hon. Director, East London Child Guidance Clinic. London: John Bale Sous and Danielsson Ltd. 1935. Pp. 88. 2*s*. 6*d*.

Dr. Miller handles his subject in a suggestive way. His keynote is the value of balance. He holds that in satisfactory living equilibrium is an essential factor, and that sleep and wakefulness are the positive and negative poles of such living. His views are certainly expressed with an understanding which the reader feels to be based on such an equilibrium, for he deals with insomnia sympathetically from the standpoint of the psychical and the physical, theory and practice, causation and treatment, in the short space of some eighty pages. An interesting feature is his reference to Mengazzini's theory of the activity of the endocrines in the production of sleep and waking and of the share which the vegetative nervous system may have in the disorders of sleep; he hints that these factors are often associated in the sleep disorders of childhood and may sometimes explain such difficult problems as enuresis and night terrors.

The discussion of insomnia in the absence of any physical cause, such as pain or disturbed digestion, is of real interest. Such disturbances seem to resolve themselves into the fears and preoccupations of an anxious mind, whether they become evident through the dream of the normal, the somnambulism of the neurotic, or the waking hallucination of the psychotic. From the chapters on treatment much useful information can be collected in terms of general measures, drugs in their varied forms and psychotherapeusis.

An excellent little bibliography is appended.

Physical Chemistry

For Students of Biology and Medicine. Second edition. By DAVID INGERSOLL HITCHCOCK, Ph.D., Associate Professor of Physiology in the Yale University School of Medicine. Springfield, Ill.: Charles C. Thomas; London: Baillière, Tindall and Cox. 1934. Pp. 214. 12*s*. 6*d*.

THIS volume is a worthy addition to the long list of books which have been the outcome of the attempt to teach physical chemistry to medical students. In these books the preface usually contains a despairing allusion to the state of ignorance of the student, a hint that this makes the writer's task extremely hard, and a modest hope that success has been achieved. The book now under review covers the ground adequately and has the advantage of possessing a good bibliography. The subjects are treated in a fairly non-mathematical manner, but it is to be feared that the author has assumed in his readers more basic knowledge than the English medical student as yet possesses.

Medical Case-taking and Diagnosis

By A. J. KOHIYAR, B.A. Bom., M.D. Lond., M.R.C.P. Lond., Hon. Physician, J.J. Hospital, Bombay; late Professor of Biology, Grant Medical College, Bombay. Bombay: The Medical Bulletin. 1935. Pp. 133.

THIS is a short manual in which the orthodox methods of history-taking and physical examination are simply and attractively set forth, and the accompanying incidental information about disease and its manifestations is sound, useful, and not overburdening. Although the author is writing ostensibly for Indian medical students, we find no special mention of tropical conditions except in one chapter on the differential diagnosis of fevers, and we are tempted to ask why this book should be offered in place of the standard English books. One reason may be that it is shorter and simpler. Another is that the author wishes to emphasise the importance of systematic physical examination by omitting altogether the laboratory methods. He leaves these —including even urine examination—to be dealt with elsewhere, and gives all his space to history-taking and the searching of the patient's body by the examiner's eyes and hands and ears. There is much to be said for this attitude: if the Indian student masters the methods here set forth he will have laid a good foundation.

Commonsense Dentistry (a National Necessity)

By EDWARD SAMSON, L.D.S., F.C.S., Honorary Dental Surgeon to the Royal Victoria and West Hants Hospital, Bournemouth. London: J. S. Cottrell and Co. 1935. Pp. 100. 7*s*. 6*d*.

THIS book consists of three chapters, two of which are alliteratively named the Caries Chaos and the Pyorrhoea Panic. Mr. Samson makes some shrewd and witty hits at the confusion which reigns with regard to the ætiology and prevention of caries and pyorrhœa. The first chapters in which Mr. Samson pours ridicule on the theories concerning caries and pyorrhœa are funny in places, though perhaps not quite so funny as they are intended to be. In the last chapter entitled Common-sense Dentistry, with a portentious sub-title, "the birth of a new

idea," Mr. Samson purports to provide a remedy for the lack of precise knowledge as to how dental disease is caused. He seems to think that if the government instituted a national laboratory for investigating dental caries and pyorrhœa all would be well and that the problems of causation and prevention would be speedily solved. All that is required, according to him, is for the Minister of Health to appoint a committee which should consist of the Minister himself, his chief medical officer, a public dental surgeon, a practising dental surgeon, a member of the Medical Research Council, and a member of its subcommittee on dental disease, together with any dental surgeon or other person whom the committee thinks would be useful. This committee would investigate the various reputable (sic) theories, correlating them according to their class and probability as advised by their professional members, apparently the dental surgeons. It would also gather statistics and, as the result of its labours, produce a report containing a line of action for the tame scientists herded in a government laboratory of dental research, who would then proceed to make discoveries which would solve the knotty problems of how dental disease is caused and how it may be prevented. How easy it sounds!

NEW INVENTIONS

ENDOTRACHEAL INSUFFLATION OF THE NEW-BORN

Messrs. Down Brothers, of London, have made for us the apparatus necessary for intratracheal insufflation of an O_2-CO_2 mixture in the treatment of asphyxia neonatorum as described in THE LANCET of March 30th, 1935 (p. 736).

The direct vision pharyngoscope illustrated (Fig. 1) is a modification of Howarth's Chevalier Jackson's instrument which has been designed for use in the new-born infant. The speculum is 10 cm. long, and its greatest outside diameter is 1·6 cm. The spatula is very short so that the soft palate does not obstruct the line of vision. The handle of the instrument is parallel to the speculum and joined to it by a shank 11 cm. long. This parallel handle gives better control than one set at a right angle to the speculum, and a shank of 11 cm. gives sufficient clearance between the handle and the chest wall during use. A wide infero-lateral slot runs the entire length of the speculum so that the pharyngoscope can easily be withdrawn without displacing the catheter when the latter has been introduced into the trachea. The illumination is by a lamp situated at the distal end, and the current is supplied by a battery enclosed in a separate wooden box with a variable resistance. In practice this arrangement of having a large separate battery has been found to be very satisfactory, since a dry cell purchased eighteen months ago is still in use by one of us.

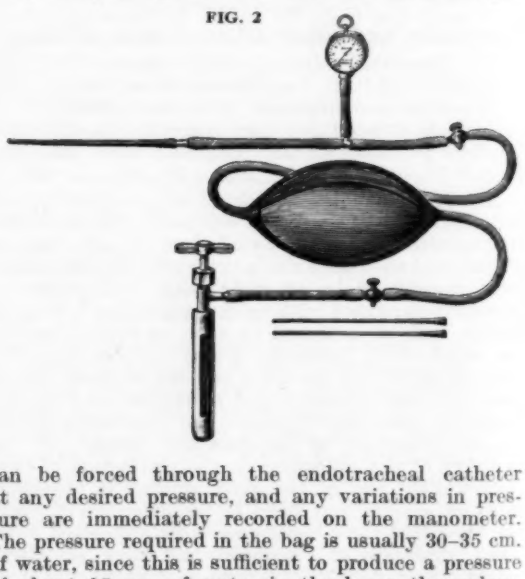
FIG. 1

The catheter used is a Magill's silk-web endotracheal catheter with a funnel-shaped end. Sizes 3, 4, and 5 give a suitable range. The choice between these sizes is determined by the size of the infant.

The apparatus (Fig. 2) for delivering the O_2-CO_2 mixture (90–95 per cent. O_2 and 5–10 per cent. CO_2) consists of a rubber bag of 3000 c.cm. capacity fitted at one pole with an inlet tube which can be connected to the supply of gas, and through which the bag can be filled. A tap on the inlet tube allows the bag to be disconnected from the supply of gas if necessary so that it can be kept in readiness in a convenient place, after having been filled. At the opposite pole of the bag is the outlet tube also furnished with a tap. This rubber tube is about 2 ft. long and terminates in a conical glass connexion which is easily connected to the funnel-shaped end of the endotracheal catheter after the latter has been introduced through the direct vision pharyngoscope. By means of a metal T-piece an aneroid manometer is attached to the outlet tube near its exit from the bag. This manometer has been specially made to register pressures within a range from 0 to 50 cm. of water.

By compressing the bag with the hand the gas can be forced through the endotracheal catheter at any desired pressure, and any variations in pressure are immediately recorded on the manometer. The pressure required in the bag is usually 30–35 cm. of water, since this is sufficient to produce a pressure of about 15 cm. of water in the lungs themselves, provided a suitable size of catheter is chosen, depending upon the size of the infant. If necessary the bag can be continually refilled without interrupting the process of insufflation. The whole apparatus is compact and can be easily carried in the midwifery bag.

FIG. 2



G. F. GIBBERD,
J. B. BLAIKLEY.

THE LANCET

LONDON: SATURDAY, JULY 20, 1935

ARTIFICIAL RESPIRATION ON THE SPOT

RESPIRATORY failure is the commonest mode of death, and artificial respiration is one of the three principal means of overcoming it, the others being inhalation therapy and the use of drugs. The method adopted may be either manual or mechanical, and the past few years have seen big advances in the evolution of apparatus designed to ventilate the lungs and to keep the respiratory mechanism working. The Drinker-Shaw respirator and the Bragg-Paul pulsator, for example, have both proved of great value where artificial respiration has to be maintained for very long periods; they have been used with success in Landry's paralysis and in the paralysis following poliomyelitis and diphtheria, as well as in cases of poisoning by carbon monoxide and by narcotics, and in cases of electrocution, apparent drowning, and asphyxia neonatorum. Complicated apparatus cannot, however, be applied rapidly outside hospital, and most of the accidents in which artificial respiration is urgently needed take place in the street, on the seashore, in the workshop, or in the power-house—that is, in places far removed from the most up-to-date instruments for expert medical treatment. Hence the proper use of manual methods is of first importance.

Of the many manual methods available, the two most popular are those of Silvester and Schäfer. Before SILVESTER brought his forward in 1858 those in use were crude and unsatisfactory. Thus H. W. RIVERS,[1] writing in 1845, says that—

> "the best mode of artificial respiration is by inflating the lungs from the breath of another person, or by means of a pair of bellows, . . . the pipe of which should be introduced into one nostril, and the other, as well as the mouth, should be closed. The bellows should then be put gently in motion until the lungs are inflated, which may be known by the breath's being fuller than when the operation was commenced."

And he goes on indignantly to point out that "the vulgar, inhuman and unphilosophical practice of rolling a party labouring under asphyxia, from drowning, on a barrel, or suspending him by the feet, needs only to be mentioned to be condemned." To-day, 90 years later, our outlook on the problem is or should be founded on a more scientific basis. In our present issue Dr. C. J. MIJNLIEFF sets forth four requirements which a manual method of artificial respiration must meet. First it should secure sufficient ventilation of the lungs; secondly, this ventilation should fulfil its primary purpose of facilitating exchanges of blood gases in the pulmonary circulation; thirdly, the nutrition of the heart must be promoted in order to maintain both the pulmonary and the systemic circulations; and finally, the application of the method must not injure the patient. With these requirements all will agree; but do they go far enough? We would add that any form of artificial respiration which is to be widely recommended should be easily learnt by unskilled workers and easily applied. Experimental work by various investigators shows that Silvester's method gives better ventilation of the lungs than those of Howard and Schäfer, since it aims at the rhythmical increase and decrease of the negative pressure in the thorax; and it is this negative pressure which brings about distension of the air cells and the blood-vessels surrounding them and helps to promote the blood flow in the pulmonary circulation. From the anatomical and experimental standpoint Dr. MIJNLIEFF is able to make out a good case for preferring it to that of Schäfer. It is well to bear in mind, however, that the forced expiration initiated in Schäfer's method brings in its wake a not inconsiderable negative pressure, due to the inherent resilience of the pulmonary tissues, the pleural membranes, and the thoracic wall. The state of equilibrium of the extensively distributed elastic tissue in the thorax is inconsistent with either forced inspiration or forced expiration.

At the fourth international Congrès de Sauvetage et de Secours held at Copenhagen last summer a number of manual methods were described and strongly advocated. On the whole English, American, and French medical opinion favoured Schäfer's, but the German and Dutch schools condemned it strongly and stood by Silvester's or its modifications. Prof. STEFAN JELLINEK[2] advanced an interesting method of his own.

> The patient is placed on his back with a pad between the shoulder-blades. The fingers of the patient's own hand are placed on his tongue, and fixed in position by a bandage round the wrist and neck. This manœuvre prevents the tongue from falling back over the glottis. The shoulders are then pushed down, or, as Jellinek says, folded back over the pad between the shoulders, and then allowed to return, to their original position. In this way the volume of the thorax is increased and decreased rhythmically.

He claims that this procedure is distinguished from all others by the fact that it is based solely on a folding action and not on compression or traction. His main objection to Schäfer's method is that, in experimental animals, compression of the chest brings about œdema of the lungs and brain. If in reply we argue that it is not always possible to infer from animal experiments that similar conditions would arise in man, this argument only lends force to JELLINEK's statement that research on life-saving and reanimation is not sufficiently widespread. The two main questions

[1] Rivers, H. W., "Accidents—Popular Directions for Their Immediate Treatment," Baltimore, 1845. Quoted from The National Safety News, May, 1935, p. 20.

[2] Jellinek, S.: Bruxelles méd., Feb. 17th, 1935, p. 432.

to be answered are: what method should be taught to first-aid workers and unskilled workmen who have to deal with an unconscious comrade, and what methods should medical practitioners be able to apply or supervise? It seems reasonable that the unskilled worker should be taught the simplest, but there is no need for the doctor to be limited in his choice. Schäfer's method is taught by the St. John Ambulance Association, which recommends Silvester's only when it is inexpedient or impracticable to turn the patient on to his face; and there does not seem to be sufficient reason why a method used with success by first-aid workers should be abandoned by them. But medical practitioners might be more eclectic. As HEDERER[3] points out, cases of asphyxia fall roughly into three groups: (1) Asphyxia from drowning, in which the respiratory passages are partly or wholly obstructed by water or froth. Here, and wherever there is œdema of the lungs, Schäfer's method is probably the most useful, because the position of the patient and the compression of the chest help to empty the bronchial tubes. (2) Asphyxia from poisonous gases, in which the respiratory passages are often clear. Here the methods of Silvester or Jellinek might be used with advantage. (3) Syncope or "white asphyxia," in which there is some inhibition of the respiratory centres in the brain. Here the method which will probably give the best result is Silvester's or a modification of it, combined with rhythmical traction of the tongue.

In accidents due to electric shock it is observed that artificial respiration, started by the victim's associates, often stops as soon as a doctor arrives on the scene. Yet in these cases prolonged artificial respiration is the one essential form of treatment, even when signs of life are not obvious. In many factories resuscitation apparatus, consisting of a mask and cylinders of oxygen and carbon dioxide, is available, and when possible artificial respiration should be combined with the administration of this mixture of gases, which has a valuable stimulating effect on the respiratory centre. But with or without apparatus, artificial respiration must be maintained, and all things considered it seems that Schäfer's method will be the most appropriate variety. After clearing out the mouth and throat the first-aid worker can feel sure that this part of the air-passages will be free, whereas with Silvester's method the tongue has to be held up and the angle of the mandible pushed forward—small and important details which may be neglected by unskilled workers in the heat of the moment. Schäfer's method is easily taught and easily learnt and if it is performed carefully at a proper rhythm the patient will not be injured. But in cases of electric shock, whatever form of artificial respiration is adopted, it should be carried out by a team of workers for not less than eight hours, if automatic respiration has not previously been established. It is better to waste effort on a dead man than to lose a chance of bringing back a life which is only suspended.

[3] Hederer, C., quoted by Sillevaerts, C.: Ibid., 1934, xv., 131.

URINARY INFECTION

THERE is now general agreement that the introduction of the ketogenic diet has greatly improved the prognosis of chronic urinary infection. In a recent critical review of 150 cases treated at the Mayo Clinic E. N. COOK and W. F. BRAASCH[1] say that this diet was successful in curing 85 per cent. of the uncomplicated cases. In the presence of any form of obstruction, however, the diet, while relieving symptoms, often failed to sterilise the urinary tract. This is only to be expected, since any obstruction to the outflow must lead to retention, and infection of the stagnant urine will follow almost inevitably. Unless the obstruction is removed the infection may persist despite any form of treatment. The importance of this factor and of a search for some underlying cause in every case of chronic urinary infection is emphasised by Prof. A. W. M. ELLIS on another page of this issue. The cases described by him illustrate some of the forms of obstruction to the urinary outflow which may be found in chronic pyelitis; they also serve as an effective demonstration of the value of intravenous pyelography in routine investigation. It is noteworthy that the ketogenic diet is not equally lethal to all types of organisms found in urinary infections; it appears to be most useful in cases infected with coliform bacilli. These organisms, which account for approximately 80 per cent. of all urinary infections, can be subdivided by their biochemical reactions into two main groups: the *Escherichia coli* (*B. coli*) and the *Aerobacter aerogenes* (*B. lactis aerogenes*). Of 200 cultures of Gram-negative bacilli isolated from the urinary tract and studied by J. H. HILL and co-workers,[2] 100 were found to fall into the former group, while 79 belonged to the genus aerobacter. The two groups differ greatly in their resistance to drugs and also in their reaction to the ketogenic diet,[3] the aerogenes group being the more resistant.

The ketogenic diet as a practicable therapeutic measure has been justly criticised on the grounds that it is unpalatable, that it cannot always be tolerated, and that, since it requires the assistance of a skilled dietitian and a continuous and rigorous supervision of the patient, it is only suitable for treatment in a hospital or nursing-home. CLARK and B. F. KELTZ[4] have devised a simplified form of the diet, something on the plan of R. D. LAWRENCE's line rations for diabetics, which, they hope, may make it possible to treat coöperating patients in their own homes. But while some patients of education and fortitude living at home may and actually do adhere strictly even to the ketogenic diet now in use, it seems doubtful whether the ordinary out-patient will ever be persuaded to persist for 10 or 12 days without an occasional indiscretion with a diet which may be simpler to plan but is no more palatable. It must be remembered that

[1] Jour. of Urol., 1935, xxxiii., 583.
[2] Jour. of Bact., 1929, xvii., 205; Jour. Amer. Med. Assoc. 1935, civ., 1186.
[3] Clark, A. L.: Jour. of Urol., 1934, xxxi., 193.
[4] Jour. Amer. Med. Assoc., 1935, civ., 289.

even a single dose of a sweetened cathartic contains sufficient carbohydrate to upset the ketogenic-antiketogenic balance. CLARK and KELTZ hold that several short courses of dietary treatment are preferable to one long one and that whether or not the results have been satisfactory a mixed diet should be resumed after 12 days. Here again is a source of difficulty; it is mainly the hope of a more or less permanent cure without another course of treatment that induces patients to keep to the rules.

Not long after the introduction of the ketogenic diet A. T. FULLER[5] showed that the effective agent in the urine of patients under treatment was one of the keto-acids, β-hydroxybutyric acid. This acid was found to exert a bactericidal action in vitro below pH 5·5, and it has since been shown that if the treatment is to be successful, a minimum concentration of 0·5 per cent. of the acid must be obtained in a urine of low pH. β-hydroxybutyric acid cannot normally be given by mouth to control urinary infections, since it is completely oxidised unless the patient is in a state of ketosis. It has been administered orally both by FULLER and LEONARD COLEBROOK[6] and by COOK and BRAASCH (loc. cit.) to reinforce the effect of a dietary ketosis. A few weeks ago we published a paper by Dr. M. L. ROSENHEIM[7] advocating the use of mandelic acid as a substitute for the ketogenic diet. This acid, like other organic acids allied to β-hydroxybutyric acid, was found not only to be bactericidal in vitro to coliform bacilli but to be non-toxic; but unlike many hydroxy-acids, after oral administration it was excreted unaltered in urine which was rendered bactericidal. Mandelic acid has been used with promising results in the treatment of a small series of cases of urinary infection at University College Hospital and is, we understand, receiving a more widespread trial. In order to obtain the effective concentration in the urine (0·5–1 per cent.), it is necessary to give the acid in large quantities (12 grammes a day). Since this dose may act as a mild renal irritant, a careful watch must be kept for any increase of albumin and for casts in the urine. Mandelic acid, like β-hydroxybutyric acid, is only active at a low pH and this can conveniently be produced by the simultaneous administration of ammonium chloride. Mandelic acid treatment evidently demands the same careful supervision of the patient as does the ketogenic diet. But those who have either had personal experience of this nauseating diet, or have acted as dictator to one who is confined to it will welcome the possibility of attaining equivalent results by the use of a drug not unpleasant to take. This new treatment is the logical outcome of the recognition of β-hydroxybutyric acid as the active agent in the urine of patients on the ketogenic diet, and we hope that further clinical experience will show that it can effectively replace dietary measures in the treatment of chronic infections of the urinary tract.

[5] THE LANCET, 1933, i., 855.
[6] Ibid., 1933, ii., 735.
[7] Ibid., 1935, i., 1032.

HERD IMMUNITY

THE experiments with mouse herds of W. W. C. TOPLEY and MAJOR GREENWOOD at the London School of Hygiene and Tropical Medicine are gradually lending precision to our understanding of epidemic and endemic events. In a paper read at the congress of the Royal Sanitary Institute at Bournemouth on July 16th, Prof. TOPLEY indicated some of the conclusions to which the work is pointing. He suggested the following definition of herd immunity: "The immunity of any herd in relation to any infective disease may be expressed inversely in terms of the rates of morbidity or mortality induced by the exposure of that herd to the risk of infection with the causative organism of the disease in question." Herd immunity may be of two types: (*a*) dependent upon the social or biological structure of the herd, being non-specific and due to conditions unfavourable to the transmission of infection; and (*b*) dependent upon the individual immunity (of some or all of the herd members) resulting from natural infection or from artificial immunisation. Such immunity is narrowly specific in its action. It is owing to the vulnerability to attack of the agents carrying the intestinal and insect-borne infections that a herd immunity of the former type has been acquired to such diseases as cholera, plague, and typhus. The droplet infections, on the other hand, are limited in their spread only by the immunity which individuals have acquired by clinical or subclinical reactions to them.

In the experiments of TOPLEY and GREENWOOD immunity of type (*a*) is eliminated, and the behaviour of infectious diseases is observed in a community of mice, more or less constant in population, of whom some of the initial group are deliberately infected and the casualties are replaced by susceptibles. It has been found possible to maintain such artificial centres of disease for several years, the rate of addition usually being three mice a day. The infections used are mouse typhoid, pasteurellosis—resembling pneumonic plague—and a virus disease, ectromelia. During the first few months of such an experiment there tend to be waves of mortality, but later the death-rate usually settles at a steady level if the rate of daily additions is sufficiently high. This state of affairs, artificially induced, indicates, it is suggested, that the epidemic process, when fully established under conditions which allow free spread of infection, has no inherent factor that imposes periodicity, or, indeed, any wave-like movements of mortality. The average expectation of life limited to 60 days in a healthy herd recruited at the same rate (three mice a day) is about 58 days. In herds infected with disease, new entrants have about half this normal expectation, falling to about a quarter or two-fifths at the end of 10 to 20 days, and then gradually improving until those that have survived for 50 days have 70 per cent., and those that have survived 100 days 80 per cent., of the normal expectation of life. The death-rate (the

probability of dying within five days) rises rapidly to the twenty-fifth day of cage-age and then tails away. It is believed that the better resistance of the surviving mice is mainly acquired by sub-lethal infection and is not genetic in origin.

"When an infected herd is formed," says Prof. Topley, "there is a rapid spread of infection, associated within a few weeks with a wave of mortality. The majority of the new entrants are infected soon after entry to the herd; half of them within a fortnight, 80 per cent. or more within a month. During the earlier stages of the epidemic the mice at risk are in part being killed by the prevailing disease, in part being immunised by sublethal infections. This early stage is marked by a widely fluctuating death-rate, or in some cases by separated waves of mortality. Later, as the total population increases, it becomes differentiated into sub-groups of varying cage-age, and consequently of varying resistance. Finally, a condition of equilibrium is attained, in which a steady average death-rate, derived from different death-rates operating on the different cage-age groups, combines with a steady rate of immigration to produce an invariant total population."

TOPLEY and GREENWOOD have tried to influence this course of events by immunising mice before admission to the infected herds. In mouse typhoid the epidemic was not modified in its course, but the individual mice had a slightly improved expectation of life. With ectromelia, however, an attenuated virus had a much more striking effect. Immunised entrants artificially acquired as good a chance of survival as the old members of an infected herd and not much less than that of the normal uninfected.

Prof. TOPLEY is cautious in applying these results to the practical problems of hygiene. They are in accord with the view that natural immunisation by clinical or subclinical infection, combined with the rate of accumulation of susceptibles in a community, is the most important single factor in determining the form of the endemic-epidemic prevalence of human disease which is provided with ample channels of natural spread. As regards artificial immunisation, they agree with the common experience that vaccination against a virus disease tends to be far more effective than vaccination against a bacterial disease of the invasive type; but no opportunity has been afforded for testing the effect of pre-immunisation against toxæmic types of bacterial disease like diphtheria and scarlet fever. The work on ectromelia at least supports the case for vaccination against small-pox (if any further scientific support was needed) and holds out hope that influenza may yet become controllable as the result of the work of Sir PATRICK LAIDLAW and his colleagues. Something is lacking in all antigens used for promoting immunity to the enteric group, and with Prof. H. RAISTRICK, Prof. TOPLEY is attempting to find one which is more effective in mouse typhoid. As to the droplet infections, the fact that these appear to be insusceptible to any other method of control except pre-immunisation may bring disappointment to some, but should at least lead to much greater coöperation between public health departments and laboratories in carrying out field investigations.

ANNOTATIONS

DUFFERIN FUND JUBILEE REPORT

THE Dufferin Fund, which has been selected as one of the four benevolent organisations in India to benefit by the Silver Jubilee Appeal, celebrates its own jubilee this year. The fiftieth annual report of this national association for supplying medical aid by women to the women of India describes the work for 1934 of the Dufferin Fund proper and includes that of the Women's Medical Service subsidised by the Government of India. The income of the former, though sadly diminished by the fall of interest on invested funds—succeeded in maintaining the usual twenty-seven scholarships to enable selected women medical students to study and qualify in 5 Indian universities, and in subsidising various women's hospitals in different provinces. The total number of women students taking the University courses was 367. There are also 593 women studying medicine in various medical schools throughout India. At the Lady Hardinge Medical College, New Delhi, 152 women students are in residence, drawn from 22 provinces and states and of 9 different races and religions. The course is spread over seven years, two of which are pre-medical. Nine members of the Women's Medical Service are deputed to this college as teaching staff and medical officers in charge of the various units of the hospital attached to the college. This hospital contains 220 beds and 56 cots; 4376 in-patients and 18,046 new out-patients were treated in 1934 and 2600 operations were performed; of these 215 were abdominal sections—59 being Cæsareans. The surgeon in charge of the surgical unit pleads for more radium in a form suitable to the treatment of carcinoma other than that of the uterus; the supplies at present available can only be used for this purpose. The reports of almost all the other 27 hospitals staffed by members of the Women's Medical Service form depressing reading.

Whilst most valuable medical work is clearly being done in these institutions, the difficulties with which the staff have to contend must be discouraging in the extreme: antiquated buildings and equipment, inadequate provision of absolute necessities, such as drugs, instruments, bed linen; poor housing conditions for an underpaid staff. Lack of funds is evidently hampering the work to an extent which would not be tolerated by public opinion in this country. There are now 41 full members of the Women's Medical Service, 21 of whom are of Indian domicile; 8 members are on probation and there is a reserve of 12 graduates of Indian universities in training. One development during the year under review is the appointment in London of a medical adviser to the United Kingdom branch of the Countess of Dufferin's Fund. Dr. Agnes Scott, who was chosen as the first holder of this office, is a former chief medical officer of the Women's Medical Service, can be consulted on Monday afternoons or Thursday mornings, at India House, Aldwych, where, through the courtesy of the High Commissioner for India, she has been given an office.

VITAMIN STANDARDS

AT the request of the Health Organisation of the League of Nations, the board of trustees of the United States Pharmacopœia have consented to make generally available the standard cod-liver oils prepared for use in the United States as secondary standards for vitamins A and D. The distribution of these oils will not be made through the national distributing centres, as in the case of the primary Vitamin Standards, but direct to individual users. They may be obtained from E. Fullerton Cook, Ph.M. (chairman of the Committee of Revision of the U.S. Pharmacopœia), 43rd Street and Woodland-avenue, Philadelphia, Pa., U.S.A. It should be clearly stated whether Vitamin A oil or Vitamin D oil is required. A charge of 2·50 dollars is made for containers holding 30 c.cm. A sum to cover the cost of the quantity required should be sent by international money order with the application. The oils will be sent post free to their destinations. These reference oils are checked each six months biologically against the International Standards by at least six laboratories and their potency should therefore be increasingly dependable.

ACTIVITIES AT THE COLLEGE OF SURGEONS

FIVE years ago the Royal College of Surgeons of England opened a few small laboratories for experimental surgery and allied problems in the college buildings at Lincoln's Inn-fields, London. Three years later a surgical research farm, the gift of Sir Buckston Browne, was opened at Downe, Kent. That the opportunities for research which were provided are not being neglected is well seen from a study of the annual report of the conservator of the museum and director of research, Dr. John Beattie, which has just been published. The subjects of investigation range from purely surgical problems—e.g., surgical shock, wound healing, nerve grafting, intestinal obstruction and peptic ulceration—to fundamental physiological problems concerning the nervous mechanisms involved in the control of visceral functions. On Feb. 2nd the contributions of two of the research workers on the development of surgical shock were reviewed in these columns, and it was then pointed out that investigations such as these provide the necessary basis for a proper treatment of shock. From this present report it appears that further progress has been made in an understanding of the nervous factors which are concerned in the production of the "shock" condition. As the result of another investigation a new treatment for achalasia of the cardia has been well established and proved its value in practice, though a proper assessment of the final results cannot yet be made. Another subject of inquiry has been intestinal obstruction, which still has too high a mortality even in the most experienced hands. Various theories have been advanced to explain this, but the experiments of two of the investigators at the college have demonstrated the presence of a toxic substance which is apparently responsible for the deaths of their animals, even when the strangulated loop was released at a time when it was still viable. The toxin is produced in the gut-wall and is liberated into the veins, lymphatics, and later into the peritoneal fluid. These results suggest that excision of a strangulated loop is a much more rational procedure than a simple release of the strangulation.

The recent development of surgical research at the college is going on parallel to a series of developments in the Hunterian Museum which will increase still further the value of the collections housed there. A new section of surgical anatomy is planned. This is to contain dissections illustrating operative approaches to every region of the body. It is pointed out that such a programme will take years to complete, but even in its early stages it is bound to be of the utmost value to every young surgeon and to most experienced operators. The pathological catalogue is to include photographs of the histological appearances of the specimens on the shelves, and microscopical slides are to be made available to students. These are much needed improvements and will be appreciated by every student who uses the collection. In time the college will become the possessor of a collection of type tumours with complete data on the case-history, operative and other treatment, histology and after-history Such a collection, properly indexed and documented, should be a national one available to every pathologist in the United Kingdom.

The council is to be congratulated on the encouragement it has given and continues to give to the forward movement in the various scientific departments at the college. It is apparent that these departments are worthy of better accommodation than they possess at present, and it is to be hoped that means will be found to carry out the scheme of expansion which is outlined in the present report.

STATISTICS OF NOCTURNAL ENURESIS

BED-WETTING is a common and troublesome problem for which despite innumerable theories of causation, and consequently of treatment, there is no certain cure. Not infrequently the habit will disappear at an early age for no obvious reason. This absence of any exact knowledge has led the Child Guidance Council, founded in 1927, to an attempt to replace generalizations by some carefully collected statistics, designed to ascertain whether in certain characteristics the enuretic child differs from the non-enuretic. Material was obtained from the case records of six Child Guidance Clinics in London, all the 1705 new cases attending the clinics in 1932 being chosen. Such cases are not, of course, representative of all children since they have been referred to a clinic because they are difficult or nervous but this selection, applies to both the enuretic and non-enuretic groups. The collection and analysis of this material has been carried out by Robina S. Addis.[1] Of the total 1705 children she reports 18·4 per cent., or nearly one-fifth, were enuretics, the proportion amongst boys (20 per cent.) being slightly higher than the proportion amongst girls (16 per cent.). In age they are, on the average, significantly younger than the non-enuretics—which might support the popular belief that a child "grows out of" the symptom. The non-enuretics are referred to the clinics in increasing numbers up to fourteen years of age while the enuretics show their peak at 8–10 years and then decrease. Position in family shows no significance, but there is a slightly lower proportion of enuretics among only children than in families of two or more. Calculation of the intelligence quotients leads to very similar average values for the enuretic and non-enuretic groups but the latter show rather more variability and there are less enuretics at the two extremes of intelligence. Enuresis is found to be by no means an invariable symptom of feeble-mindedness, not even on the idiot level, for there were thirty-two children with I.Q.'s of 40 and 50 who were not enuretic and only two who were. This, besides suggesting that bladder

[1] Archives of Disease in Childhood, June, 1935, p. 169.

control is not a function of the intelligence points, the author thinks, to the conclusion that the constitutional and psychological factors predominate. She suggests that from her figures it may be deduced that the enuretics fall into two groups, the one of high, the other of low normal intelligence, and that this is in keeping with clinical observation which has shown two main types with lack of bladder control—the slow and lethargic and the restless and anxious. In view of the relatively small number of enuretics involved in this inquiry the validity of this deduction appears very doubtful.

INJURIES TO THE FACE AND JAW IN WARFARE

THE coöperation of the dental surgeon with the specialist in plastic surgery has greatly increased the possibility of successful treatment of wounds of the face and jaws. The patient's future often depends on whether mutilation is prevented and function restored, and wonderful as are the results of operations for the repair of wounds and deformities of long standing, it is still true that mistakes in the early stages of treatment may destroy the chance of satisfactory restitution. An Army advisory committee appointed to inquire into the facilities for the treatment of maxillo-facial injuries in modern conditions of warfare, has just issued its report to the Army Council,[1] and this lays emphasis on the importance of skilled dental treatment from the time the patient first enters the main dressing-station until he reaches the home hospital. A general hospital of 600 beds should, it is proposed, have one dental officer, one clerk orderly, and one dental mechanic, and a dental officer should also be detailed to every hospital ship whose voyage may last more than two or three days —all dental officers receiving a three months' course of training in the treatment of maxillo-facial injuries. Specialised surgery does not ordinarily come into the picture until the patient has reached the home hospital, but attention is drawn to points of importance in the first-aid and preliminary treatment. The danger of suffocation and of severe hæmorrhage may be largely overcome by correct posture, and by control of the tongue—a fact with which stretcher-bearers should be familiar. The prone position, with the head hanging over the end of the stretcher, is recommended. In the preliminary surgical treatment at the casualty clearing station, the surgeon is advised to use all possible care in suturing the torn skin and mucous membrane, so that raw ends of bones may be covered and skin and mucosa may be approximated at the margins of the wound; but all stitches must be inserted without tension. Submandibular drainage is advocated for injuries of the lower jaw, in view of the high incidence of abscess formation, and, to prevent adhesions obliterating the buccal sulci, the use of a piece of stout rubber tubing encircling the sulci is suggested. The dental surgeon is given two principles which should guide him in the early stages; one is that he should be as conservative as possible in dealing with loose fragments of bone and injured teeth; the second that he should attempt fixation of the fragments in accurate position. Interdental wiring is recommended, or, in the absence of teeth, splinting by means of unbroken dentures, or of gutta-percha moulded into the mouth. Anæsthesia is advised, since it is not thought likely that post-operative vomiting will give rise to suffocation where dental wiring has been used.

The committee believes "a special hospital reserved solely for the treatment of maxillo-facial injuries is preferable to special departments in general hospitals, provided that the number of cases justifies it." The treatment of these cases tends to be tedious, to extend over a long time, and to involve a succession of operations. The provision of an auxiliary hospital to which patients can be transferred in the intervals of active treatment is almost a necessity, but unity of control is essential. The plans for the special hospital have been based on those of Sidcup Hospital, designed as a maxillo-facial hospital during the late war, and it is felt that a suitable working unit is 200 beds, with a possible extension of the number to 500. On reaching the special hospital the patient is placed under the charge of the surgeon who is to carry out the final bone-grafting and plastic operations, but the coöperation of the dental surgeon is necessary from the outset, and, in cases not requiring plastic work, he may have complete control.

An appendix to the report contains the contrasting views of Mr. Warwick James and of Mr. Kelsey Fry on the relative values of interdental wiring and of metal-cap splinting in the fixation of fractures of the mandible and maxillæ. We have previously referred[2] to the arguments advanced by the adherents of the two methods. It is allowed that good results can be achieved by either procedure, though it can be argued that one or the other gives more certainty of success. The main points on which discussion centres are the rapidity with which satisfactory immobilisation can be effected; the amount of attention necessary afterwards (a vital consideration in the conditions of war); the possibility of keeping the mouth clean; and the prevention of interference by a non-coöperative patient. Although no conclusion was possible on the relative merits of wiring and splinting, the report gives a useful summary of the methods advised for fractures at particular sites and with various complications.

A RAPID SURVEY OF BIOLOGICAL PROBLEMS

THE form of a Platonic dialogue has been adopted in a stimulating general survey of biological problems which has recently appeared in a translation from the German.[3] A, the Socrates, is made to discourse for twenty-one successive evenings upon biological problems. B, the intelligent laymen thirsting for knowledge, hangs upon the lips of his teacher suggesting difficulties and asking questions, many of which the other is hard put to it to answer. Dr. Thesing has on the whole been extraordinarily successful in this method of presenting the subject—a method which in less skilful hands could easily become tedious. The field covered by the discussions is vast. From the origin of the world and of life we are brought into touch with most of the major problems confronting the various biological sciences. The origin of man, immunity, hormones, heredity, evolution, eugenics, ecology, and many other subjects are discussed in the light of modern research. Specialists in each subject could of course find several points of detail with which to disagree; on the whole these are not important, but in the section on development no mention is made of recent experimental work on the factors which determine the fate of cells in the embryo, and this constitutes a serious omission. It is refreshing after the dogmatism of many recent popular biological books to find a clear statement of the difficulties in the way

[1] Report to the Army Council of the Army Advisory Standing Committee on Maxillo-facial Injuries. H.M. Stationery Office. 1935. 6d. net. Postage extra.

[2] THE LANCET, 1935, i., 99.

[3] School of Biology. By Curt Thesing, M.D. Translated from the German by Eden and Cedar Paul. London: George Routledge and Sons, Ltd. 1935. Pp. 368. 15s.

of accepting in toto any one of the prevalent theories of evolution. The attitude adopted towards controversial questions is in fact singularly impartial, and it is interesting to note that this impartiality extends even to questions of racial biology.

THE COMMONWEALTH FUND

THE report of the Commonwealth Fund speaks modestly of its little gift ($1,720,514·54) made to the British and American peoples during the year 1934. While others debate the burning issues of "medical economies" the Commonwealth Fund has concerned itself with attempting to raise the standards of medical service. One method of raising standards in rural communities is the establishment of the community hospital. Six rural hospitals have been sponsored by the fund as models of what a community hospital should be. All but one of the hospitals have shown increased occupancy in 1934 as compared with 1933 and their financial position is much stronger; earned cash receipts have gone up by 31 per cent., net indebtedness has been cut in half. An extensive demonstration of rural health work in Tennessee has had, as was intended, an educational value besides making a contribution to social welfare. Both in Mississipi and Massachusetts the Fund has aided in raising the standards of local health units; in the former State by sponsoring within the State health department travelling advisory and supervising units; in Massachusetts by promoting the formation of a model district health unit coördinating the efforts of sixteen towns in the south-western part of the State which previously had functioned as independent public health units. This demonstration should provide a much-needed lesson in the Eastern United States, for the old system of township units still has a devitalising grip upon public health administration even in such a progressive State as New York. In the Mountain State of New Mexico the Commonwealth Fund had for four years been helping to provide public health nurses in 15 out of the 31 counties. At the present time these nursing services, now established in the goodwill of the population, are deriving a large part of their support from local funds. To the north of New Mexico is Denver wherein is lodged the medical school of the University of Colorado. Here the Fund is supporting a significant study of normal child development. The study is being made of 100 Denver children and is under the general guidance of a pædiatrician. At suitable intervals, beginning a few weeks after birth, specially trained workers determine a record for each child: the most important bodily measurements; the development of the bones and muscles generally and posture; the development of the jaws and teeth (by plaster casts and X ray); the development of the head bones and sinuses and of the chest and heart (by X ray); the behaviour of the heart (by electrocardiograph); the basal metabolic rate; the mentality and general social adjustment. Each child is examined every quarter by a pædiatrician. Other studies are made in special groups of infants and children. The Child Research Council finds no lack of uncharted territory in the anatomy and physiology of the earlier years of human life.

Besides its medical and public health work the Fund provides fellowships to enable British university students "to spend two years as guests of the Fund in graduate study at American universities and in first-hand observation of American life." In the last ten years 260 such fellowships have been granted. Until his death last year Sir Walter Buchanan-Riddell was chairman of the committee of award; he has been succeeded by Sir Walter H. Moberly, whose academic associations put him in an excellent position to assess the claim of candidates. It is interesting that 40 per cent. of the returned fellows are now holding positions in British and Colonial schools, colleges, and universities.

AIR RAIDS AND POISON GAS

THE Home Office last week issued a circular [1] describing the precautionary measures to be taken for the protection of the public against attack by hostile aircraft. The Government feel they would be neglecting their duty to the civil population if they failed to take such precautions, since developments in the air have made it possible for attacks to be delivered—and delivered suddenly—on many parts of this country; but the circular states that "the need for these measures in no way implies a risk of war in the near future; nor does it imply any relaxation of effort on the part of His Majesty's Government to ensure the promotion and maintenance of peace by all the means in their power." The first step has been to establish an Air Raid Precautions Department at the Home Office and this will be directly responsible for central activities including the issue of warnings, the accumulation of gas respirators and protective clothing for certain air-raid services, the coördination of demands for hospital equipment, the storage of bleaching-powder for decontamination of gassed areas, and the issue of advice. The British Red Cross Society and the Order of St. John of Jerusalem are also to play their part, by the enrolment and training of emergency personnel, especially for medical and anti-gas services, and in the instruction of the public. The main responsibility, however, is to rest with the local authorities, which must arrange schemes for treatment of casualties, and the maintenance of all the essential services in their charge. These are briefly outlined in the circular, but fuller information for the authorities and the public will be given in a series of handbooks to be issued in due course. Meanwhile those interested in the subject can easily find other sources of information, both reassuring and otherwise. In the first category we have Mr. Davidson Pratt's recent lecture to the British Science Guild [2]; he thinks that the terrors of gas attacks have been much exaggerated, and believes that the civil population as a whole, if trained against panic, will find tolerable safety by staying in gas-proofed rooms in their own houses. The Union of Democratic Control, on the other hand, after reviewing [3] the incendiary and toxic agents available, quotes the conclusion of a commission of the International Red Cross (1928) that if the technique of offensive weapons continues to improve "the fatal moment must arrive in which the question of defence, already extremely difficult in view of the means already available, becomes an insoluble problem. A large proportion of the inhabitants of populated towns must be doomed to destruction." In these circumstances, it is suggested, the precautions proposed by Mr. Davidson Pratt and others cannot be taken at their face value, and the public should be fully informed of the facts, as summarised in the Union's pamphlet. By way of alternative, more technical details are

[1] Air Raid Precautions. London: H.M. Stationery Office. 1935. Pp. 8. 2*d*.

[2] Gas Defence. By J. Davidson Pratt, O.B.E., F.I.C. British Science Guild, 6, John-street, Adelphi, W.C.2. Pp. 18. 1*s*.

[3] Poison Gas. Published by Union of Democratic Control, 34, Victoria-street, S.W. Pp. 63. 6*d*.

obtainable, if desired, from the official "Manual of the Medical Aspects of Chemical Warfare" (1926) or, with later details, in a paper just issued by Dr. Bischoff[4] of Lugano, who describes the symptoms, signs, and treatment of various forms of gas-poisoning. Evidently the medical profession will soon be expected to enlarge its repertoire so as to be able to deal with these new man-made diseases. But like other pathological conditions they are more easily prevented (one would suppose) than cured.

THE EMPLOYMENT OF MARRIED MEDICAL WOMEN

THE general purposes committee of the L.C.C. have been considering representations received from various organisations with reference to the employment of married women; the object of the representations has been to secure that married women should be eligible for employment without restriction throughout the Council's service. The committee report that they have considered the question from the point of view of the public service and not in the interest of any category of the staff and have come to the conclusion that in two instances, those of the medical and teaching professions, material advantage to the public service would result if married women were eligible for service as officers of the Council. Their main reasons are that the duties of both doctor and teacher call for certain personal qualities which may be thought to be enriched by marriage, and that the training of women entering these professions involves in many cases considerable expenditure of public money, the fruits of which are lost to the community if the career of every woman is terminated by marriage. They propose, therefore, subject to certain limitations, that the restrictions which at present debar married women in these professions from entering or remaining in the Council's service should be withdrawn. As far as medical women are concerned the new proposal will apply to full-time doctors, except in the hospital and institutional medical and mental hospital service, and to non-resident part-time and sessional doctors. The holders of resident appointments are excluded from the new proposals because it is inherent in the nature of such appointments that their holders should be available for duty when required at any hour of the day or night, and the committee feel that the demands thus imposed are incompatible with the normal domestic and family responsibilities of a married woman. There is, moreover, the immediate practical difficulty of a lack of married quarters. In the event of pregnancy medical women as well as teachers will be required to take 17 weeks' compulsory confinement leave on half pay, of which 4 weeks is to be taken before and 13 after the confinement (4 weeks if the child does not live). Payment for the last 8 weeks of this period is to be withheld until the teacher or medical woman has been back at work for 3 months. The adoption of these proposals, which were accepted by the London County Council on July 16th, will involve some adjustments in superannuation provisions and certain exceptions in respect of officers transferred from the Local Government Board who were engaged under different conditions of service. The concessions are in the nature of a compromise which will give complete satisfaction neither to diehards nor to feminists. The former will continue to protest that however much skill, training, and experience a professional woman may have, her service should be lost to the community on her marriage; the organisations who made representations to the Council will be disappointed that, though its practice has been altered in respect of certain classes of certain professions, the Council has not accepted the principle underlying their representations. For ourselves, we hold that the step just taken is in the right direction and have little doubt that its success will warrant an extension in London and elsewhere of the groups of women allowed to retain their posts after marriage.

[4] Massnahmen vor, während and nach Flugzeugangriffen By L. Bischoff. Basel: Benno Schwabe and Co. 1935. Pp. 28. Fr. 1.

JUVENILE RHEUMATISM IN INDIA

To the controversy on whether rheumatic fever occurs in the tropics, Dr. K. L. Wig[1] contributes a record of 30 cases of rheumatic infection in childhood collected in the out-patient department of the Mayo Hospital, Lahore. At a time when the subject was under discussion his interest was aroused by an obvious example of juvenile rheumatism in a boy of ten who developed high fever, swollen joints, subcutaneous nodules, and carditis; salicylates controlled the arthritic phase, but the carditis seems to have been progressive and fatal. Of the 30 patients with evidence of juvenile rheumatism seen at the Mayo Hospital since the beginning of last year, 10 have had simple articular rheumatism (usually subacute) and the brief summaries given, with descriptions of recurrent sore-throat and joint involvement, leave no doubt of the nature of the malady. The same applies to the other two groups—i.e., 5 children with chorea, 4 of whom had a history of joint pains, and 15 patients with involvement of the heart. Some of the latter were adults with established mitral stenosis, with or without auricular fibrillation; the younger ones had early signs of valvular disease. Three young adults, aged 22, 24, and 25, had aortic regurgitation with mitral stenosis, following a definite history of rheumatic arthritis; and this is important since some observers have claimed that, while syphilitic aortic disease is common, rheumatic carditis is rare in the Punjab. The patients in the present series came from villages as well as from congested areas of the towns. Most of them were poor, but that may be because the hospital out-patient population is mostly poor. The rheumatic nature of the illnesses cannot be doubted and it is noticeable that usually, as in this country, the joints were involved at early ages.

AT a meeting of the council of the Royal College of Surgeons of England on July 11th Sir Cuthbert Wallace was elected president.

THE resignation is announced of Miss Ruth Darbyshire, R.R.C., after a serious illness, from the post of matron of University College Hospital. Miss Darbyshire was one of the two matrons who sat on the Lancet Commission on Nursing (1930–32) and deeply impressed her colleagues by her breadth of view, candour, and anxiety to modernise the conditions of hospital service while retaining its fine traditions. At the end of 1932 she was elected a member of the General Nursing Council for England and Wales, and in January of this year she was made vice-chairman of the Council. Her retirement from hospital work is less to be regretted inasmuch as it will give her more leisure in the future for her activities on behalf of a rapidly developing profession.

[1] Indian Med. Gazette, May, 1935, p. 260.

PROGNOSIS

A Series of Signed Articles contributed by invitation

LXI.—PROGNOSIS IN EPIDEMIC ENCEPHALITIS: ACUTE AND CHRONIC

IN most epidemic diseases prognosis is chiefly concerned in answering the question, "Will the patient live through the acute illness?" In epidemic encephalitis it goes much further. Even if the acute stage is survived without apparent damage, there is always the possibility of later developments which may not show themselves until long afterwards. When they do, prognosis is required, not only as to the duration of life but as to the temporary or permanent nature of the disorder, and in the latter case as to whether it will remain stationary or become progressively worse. Many of these questions it is as yet only possible to answer in part.

Prognosis in the Acute Stage

AS REGARDS LIFE

There are many possible sources of error in the data on which all case-mortalities are based, owing to the frequent absence of any clear-cut beginning or end of the acute stage, the occasional impossibility of recognising the true nature of even a serious attack, the frequency of unrecognised abortive attacks, and the fact that the number of "occult" cases—i.e., unrecognisable infections without symptoms—is difficult even to guess at. A. S. MacNalty (Epidemic Diseases of the Central Nervous System. London, 1927, p. 151), from the notification figures (1919–1923) found the case-mortality in England and Wales to be 54 per cent. In the Sheffield outbreak of 1924 it came to considerably less. Out of the 301 acute cases notified during the year only 43 died in the acute attack (14·3 per cent.). Similar discrepancies are found in individual records elsewhere. Taking all things into consideration, it would seem that a case-mortality of somewhere about 25 or 30 per cent. is a reasonable figure.

It is generally agreed that the acute attack is more often fatal at later periods of life than in younger persons. It is said by some that the prognosis is also more grave in infancy. In the Sheffield epidemic of 1924 the mortality was high in cases with early respiratory symptoms (polypnœa) but low in cases with abdominal myoclonus as the chief symptom. In a large series of attacks occurring in pregnancy F. Roques (1928) found a case-mortality of 42 per cent. The mortality figures for infection during pregnancy, however, differ somewhat widely. On the whole, to make a prognosis as to life in the acute stage is of little value until symptoms of grave omen or definite signs of convalescence have set in. Cases which for some days are apparently mild may, suddenly, become gravely worse, and even after apparent convalescence fatal symptoms may supervene.

The expectation of after-effects.—Here, also, data are scanty and difficult to obtain. The long period of apparent health, in some cases extending to several years, which may intervene between the recognised acute attack and the onset of chronic symptoms, makes the follow-up of many cases exceedingly difficult. At the end of 1925 a careful follow-up of the 300 acute cases in the Sheffield outbreak (spring, 1924) showed that only about 18 per cent. had recovered completely.

In most of the cases recorded as complete recoveries the original attack had been of mild type. On the other hand, parkinsonism, even of a severe kind, may follow not only a mild acute illness or an abortive attack, but even an "occult" infection. It would also seem to be comparatively rare for complete recovery to follow a severe primary attack. As to the exact form which the after-effects of a severe attack may take, there are no data on which to form a prognosis.

PROGNOSIS IN THE CHRONIC STAGES

As this includes many conditions in which the prognosis is different, it will be more convenient to consider each separately.

(a) *Disorders of sleep.*—In most cases these disappear largely if not wholly within a year or two of the acute attack, whether treated or not. Although in particular individuals sleep may remain abnormal for years, on the whole the permanent amount of this disorder is not a marked feature.

(b) *Various spasmodic attacks.*—The prognosis as regards polypnœa, jaw attacks, torsion spasms, and so forth is much the same as that relating to sleep disturbance. Even severe attacks of torsion spasm, occurring frequently, may after a few months or years become less and eventually disappear.

(c) *Polyuria* is not a common complication. In one severe case in my experience it cleared up completely after lasting for about a year. The man eventually developed severe parkinsonism.

(d) *Epileptic fits.*—Both major and minor fits may occur for the first time either in the acute or chronic stage. Their presence does not necessarily add to the gravity of prognosis. They do not tend to increase in number or severity.

(e) *Mental and moral changes.*—Some of those who during or soon after the acute attack become dangerously impulsive or actively suicidal may improve in those respects in course of time. Such improvement, however, is often associated with an increase in parkinsonism. G. A. Borthwick (Encephalitis Lethargica. London County Council's Report, 1931, No. 2811) at Winchmore Hill finds that of the children showing behaviouristic disorders "the milder cases have done well with the orderly routine of the hospital, and whilst in residence have almost reached normal standards of behaviour." In the more severe cases, however, the prognosis is bad and real improvement is not to be anticipated.

(f) *Oculo-gyric attacks.*—These are always associated with definite, although in some cases only slight, signs of parkinsonism. In a few cases they may, from time to time, become either less frequent or less severe, or both. In one or two this has seemed to be the result of treatment, but detailed inquiry has failed to prove any definite causal relationship. The prognosis as to these is that they continue to occur, at any rate, for ten years after onset.

Post-encephalitic Parkinsonism

DURATION OF LIFE

The parkinsonian syndrome alone does not necessarily shorten life. It must, however, be borne in mind that many of the parkinsonians affected as the result of epidemic encephalitis have received much wider damage to the central nervous system than that which brings about this syndrome alone.

Up to the end of 1934 it has been possible to follow up completely 289 out of over 500 cases of post-encephalitic parkinsonism, of which we have records

Of these 289, 77 have died (just over one-quarter), so that nearly three-quarters of these parkinsonians are alive, at least ten years from the date of the acute infection—and some as much as 15 or 16 years. (In our series the number of acute infections dating from later than 1924 is so small as to be negligible.)

The 77 fatal cases may be divided into two groups: (*a*) those in whom death was not directly due to the disease; (*b*) those in whom death was probably directly due to the disease.

(A) *Death not directly due to the disease.*—24 cases (M., 16; F., 8).

(1) Suicide: 7 cases (M., 5; F., 2).

(2) Accidents: 5 cases (M., 3; F., 2). Three of these were due to bradykinesia. The two women fell on the fire and were fatally burned; one man was found face down in a shallow pool of water. There was no question of suicide in any of these.

(3) Intercurrent diseases: 12 cases (M., 8; F., 4).

(B) *Death probably directly due to the disease.*—53 cases (M., 26; F., 27).

(1) Gradual progressive decline: 45 cases (M., 23; F., 22). It has not been possible to obtain the exact mode of death in many of these cases, but most of them were more or less bedridden, and some had been so for long—sometimes with extreme emaciation and bedsores. Possibly in many some terminal infection ended the scene. The duration of these varied widely: 31 died within five years of infection; 10 died between five and ten years after infection; 4 died more than ten years after infection. The longest was 17 years after. This was a man whose acute attack occurred with the Army in France, in 1917.

(2) Sudden unexpected death: 9 cases (M., 3; F., 6).

These occurred in two ways: (*a*) In seven, death occurred whilst in bed, sometime in the early morning. Six of these were young women and one a youth. In all these the possibility of suicide or of accidental smothering may be certainly excluded. Involvement of the respiratory centre seems a possible explanation. (*b*) In the two remaining cases of sudden death—both males—the cause was a sudden hyperpyrexia with no other symptoms. In each of these death occurred within 24 hours of onset. In one the man had been under close observation in a mental hospital for several years, and except for a parkinsonism of hemiplegic type, was apparently very well. His temperature reached 109° before death. Involvement of the temperature centres seems a possible explanation.

None of these cases of sudden death were bedridden at the time of death, indeed, most of them were able to go about actively; nor was any particular intensive treatment being carried out.

PROGRESS OF DISEASE

As was mentioned above, almost 75 per cent. cases of parkinsonism may be expected to live for at least 10 or 15 years. How much longer remains to be seen. The question then arises: What is their condition likely to be during that period? To form an idea of this we have divided our cases into three groups according to their capacity for looking after themselves—i.e., as regards dressing, feeding, walking about, &c.: group I., completely independent; group II., partially dependent; group III., completely dependent.

A follow-up of 212 cases living at the end of at least ten years from the date of acute infection gives the following: group I., 70 per cent.; group II., 18·5 per cent.; group III., 11·5 per cent.

These cases include a certain number in institutions and also those attending the out-patient clinic.

CONCLUSIONS AS REGARDS CHRONIC PARKINSONISM.

1. Absolute recovery with complete disappearance of all symptoms is unknown.

2. Complete or almost complete standstill does occur, at any rate, for as much as 16 years.

3. Most cases tend to become worse, but the rate at which this happens is extremely variable. In a few it may be measured by weeks, in more by months, in most by years.

4. Suitable treatment may cause marked improvement in the muscular rigidity and, if continued, maintain the improvement for long periods.

5. Tremor, when once developed, does not disappear entirely, but tends to get worse. No treatment yet known has any permanent effect in stopping it.

6. Excluding suicide and accident, about 23 per cent. of parkinsonians die within 10 or 15 years of infection. Of these, in about 15 per cent. the end is expected, and preceded by progressive failure; in about 5 per cent. there is definite intercurrent disease; whilst in about 3 per cent. sudden and unexpected death may occur at any time whilst the patient is apparently in his usual health.

ARTHUR J. HALL, M.D., F.R.C.P.,
Emeritus Professor of Medicine, University of Sheffield; Consulting Physician to the Sheffield Royal Hospital and in charge of Encephalitis Clinic; Visiting Physician, S. Yorks Mental Hospital and State Institution, Rampton.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Comdr. W. J. Morris to *Victory* for R.N.V.

Surg. Lts. L. G. Yendoll to *Vernon*, J. M. T. Reese to *Codrington*, and J. L. S. Coulter to *Maine*.

Surg. Lt. (D.) S. R. Wallis to *Ramillies*.

Proby. Surg. Sub.-Lt. R. F. Hand to *Lucia*.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lt.-Comdrs. S. B. Borthwick to *Pembroke* for R.N.B. and to *Australia*, A. S. Bradlaw to *Courageous*, and H. A. M. Whitby to *Rodney*

ROYAL AIR FORCE

Flight Lt. R. K. Muir to No. 3 Armament Training Camp, Sutton Bridge.

Wing Comdr. T. C. St. C. Morton to R.A.F. Institute of Pathology and Tropical Medicine, Halton, for duty as Commanding Officer.

Flight Lt. O. M. Fraser to R.A.F. Hospital, Cranwell.

Dental Branch.—Flight Lts. J. M. Jamie and F. B. Sumerling are transferred to the Reserve, class D. Flying Offr. K. G. Swiss, to Medical Training Depôt, Halton, on appointment to a non-permanent commission.

AUXILIARY AIR FORCE

No. 603 (City of Edinburgh) (Bomber) Squadron: I. A. G. L. Dick is granted a commn. as Flying Offr.

INDIAN MEDICAL SERVICE

The undermentioned apptmts. are made:—

Majs. to be Lt.-Cols.: C. J. L. Patch, M.C., and S. L. Mitra.

To be Lts. (on prob.): Raymund Joseph Henderson and C. W. A. Searle.

Indian Medical Department.—Maj. (Sen. Asst. Surg.) A. R. H. Boyne retires.

COLONIAL MEDICAL SERVICE

Dr. H. B. Boucher has been appointed Medical Officer, Nigeria.

SPECIAL ARTICLES

THE BEST METHOD OF MANUAL ARTIFICIAL RESPIRATION AND HOW TO APPLY IT

By C. J. Mijnlieff, M.D.

SECRETARY-GENERAL OF THE INTERNATIONAL SOCIETY FOR LIFE-SAVING AND FIRST AID IN ACCIDENTS, AMSTERDAM

". . . The negative result of a search of the literature has made me conclude that the mechanical side of respiration has not received the attention it deserves."
—*Sir Charlton Briscoe* (1927)

Scientific investigations have led us to change our views of the requirements which a method of artificial respiration must meet. These may be summarised as follows.

THE DESIDERATA

1. *Sufficient ventilation of the lungs must be secured.*—In experiments on living persons (or animals) and on cadavers several factors have to be taken into consideration: in living persons, their unconscious and involuntary breathing, the muscular tonus of the muscles and the reflexes; in the cadaver, the altered tonus and rigor mortis. Because of failure to give these factors their proper weight the conclusions drawn from many experiments are not of great value. Thus the results of all investigations before Ploman's must be judged with reserve, and also those of Schäfer and Hamburger. Values before Liljestrand are wrong; but his own observations were very useful, and he took also into account the influence of frequency of respiration (see Table).

Ventilation of the Lung by various methods of Artificial Respiration, According to Various Investigators

Investigation by—	Method of—	No. of resp. per min.	Ventilation— Per resp. (litres).	Ventilation— Per min. (litres).
Ploman (1906) ..	Silvester ..	7–12	1·2–2·0	12–20
	Howard ..	10–14	1·0	10–15
	Schäfer ..	16–20	0·5–0·6	8–12
Liljestrand (1913).	Silvester ..	15	0·54	8·1
	Schäfer ..	15	0·50	7·5
During apnœa ..	Silvester ..	15	0·19	2·85
	Schäfer ..	15	0·17	2·55
Loewy-Meyer (1919)	Howard ..	14	0·447	6.25
	Silvester-Brosch	9–10	1·121	10·65
Bruns (1923) ..	Silvester ..	—	0·2	—
	Howard ..	—	0·05	—
	Van Hasselt-Schüller ..	—	0·1	—
	Schäfer ..	—	0·02	—

In looking at this Table it must be borne in mind that Ploman, Liljestrand, and Loewy-Meyer experimented on living persons, Bruns on the still warm cadaver. The figures in the experiments on persons in a state of apnœa are really too low because the tonus of muscles, especially of the diaphragm, is increased in apnœa (Loewy). Bruns's figures are also probably too low, because a certain amount of rigor mortis had set in. Hence the absolute values obtained cannot be regarded as reliable; but the figures are nevertheless important because they give an idea of the comparative value of the various methods employed. It will be seen that quantitatively Silvester's method gives the best ventilation.

2. *Absorption of oxygen and excretion of carbon dioxide in the alveoli, and respiratory blood circulation to and from the heart, must be promoted.*—What Brosch said in his criticism of expiratory methods is very true: "The human and animal organism does not need a physical inspiration (entrance of air into the bronchial tree) but a physiological inspiration (entrance of air into the alveoli)." Ploman and Brosch inferred that methods promoting active inspiration as well as active expiration are to be preferred because they introduce more air, cause greater enlargement of the thorax and increase the pulmonary circulation of blood. We now know that this last action is of great importance in the treatment of apparent death and that it can be secured only by rhythmical increase and decrease of the negative pressure in the thorax, as in physiological breathing; the walls of the alveoli are distended, capillaries in these walls are relaxed and dilated and blood thereupon flows from the right to the left side of the heart.

3. *The nutrition and function of the heart itself, and as far as possible of the large somatic circulation, must be promoted.*—Bruns has determined the effect of different methods of artificial respiration on blood pressure, which he measured in the cadaver at various places in the heart, large arteries and veins. Under Silvester's classical method the pressure dropped 8 cm. (of water) on inspiration and rose 1 cm. on expiration; under Silvester's method with expiratory pressure on the thorax it also dropped 8 cm. on inspiration, but rose 18 cm. on expiration; under Howard's method it dropped only 0·5 cm. on inspiration and rose 10 cm. on expiration. But with Schäfer's method, directly the cadaver was turned over the manometer registered a *positive* pressure of 12 cm., and despite strong expiratory pressure upon it there were no variations of any importance. This means that in Schäfer's method no inspiratory or expiratory change in the blood pressure is brought about; hence it has no influence on the circulation of blood. Silvester's, on the other hand, has a very favourable influence on the passage of blood—also much greater than Howard's.

Bruns showed that in the cadaver artificial respiration by Silvester's method caused blood to pass from the right side of the heart to the middle branches of the basilar artery in eight minutes. He has also shown that Silvester's plus Howard's method arterialised the blood in both sides of the heart very considerably; thus in twenty minutes its oxygen content rose from 8 per cent. to 24 per cent. and by inhalation of oxygen to 48 per cent. Bruns and Thiel have proved, moreover, that the method causes blood to flow into the finest branches of the coronary arteries. And here it is appropriate to recall Magnus's observation that after oxygen has ceased to reach it the heart contains for four or five minutes a reserve of oxygen. Furthermore, when the heart is stopped reflexly, the lungs, blood, and tissues may still contain enough oxygen to preserve the irritability of the heart as long as twenty minutes.

Many investigators have made it clear that artificial respiration in itself has a favourable influence on the heart's action and that Silvester's method stimulates the heart probably as follows: mechanically, by pressure on the thorax, rhythmically repeated, causing, by the resulting alternate diminution

and enlargement of the thorax, a pulling of the various parts of the heart (especially the auricles) and of the large vessels at their origins; and by rhythmical alteration of the contents of the heart and large blood-vessels. It also acts reflexly—by enlarging and diminishing the chest cavity, distending the lungs, making the pleuræ tense, and stretching the diaphragm—through the vagus and phrenic nerves.

Bruns (1934) has now proved, by experiments on dogs, that after the heart has been stopped (ascertained by clinical examination) by asphyxia, action currents in its muscle can still be demonstrated during some half hours. Also that at this time *normal lasting* heart action and respiration can still be evoked by Silvester's or Howard's method together with indirect massage of the heart, not by artificial respiration alone.

It seems to me that on these considerations Schäfer's method can hardly be recommended. The above experiments suggest that Silvester's modified method is the best means of meeting requirements 2 and 3.

4. Last, but not least, *there must, as far as possible, be no injury to the patient.*—It has been said that Silvester's method carries a danger of fracture of the ribs; but such an accident is possible only if it is carried out very roughly. Not long ago I inquired of every pathological institute in the Netherlands and found no case reported for 30 years or more, although Silvester's is the method far and away the most often used. In Howard's method the danger is greater.

Schäfer wrote of the risk of rupture of the liver if Silvester's method is used; but in my inquiry no such case was discovered and I agree with Keith that this risk is much greater with Schäfer's own method. Nevertheless this danger should be borne in mind, and also the possibility of rupturing the thin-walled right side of the heart distended with blood.

One advantage of Schäfer's method is said to be that when the patient is lying face downwards, water, mucus, and dirt can flow out of his mouth. I regard this rather as a danger than an advantage; for every time we lean on the small of the patient's back the stomach may be compressed and some of its contents (mud, bits of fruit, &c.) may be pressed suddenly or gradually upwards above the level of the vocal cords, so that the next inspiration sucks them deep into the trachea. Not long ago a case well known in forensic medicine in Holland proved that this danger is no imaginary one (although in this instance Howard's method was employed).

My examination of current methods of artificial respiration has thus led me to disapprove of Schäfer's method, notwithstanding its simplicity, and to affirm that Silvester's—as modified by the facts discovered since he introduced it—is the best.

HOW DOES SILVESTER'S METHOD WORK?

An anatomical investigation made in Prof. M. W. Woerdeman's department at Amsterdam has brought me to certain definite conclusions about the best way of applying Silvester's method. When I had finished my research, my attention was drawn to Sir Charlton Briscoe's Lumleian lectures on physiological respiration; and his words reproduced at the head of this paper agree with my own conclusion.

Hitherto all investigators have taken it for granted that, in Silvester's method, the chest expands through the extension of the muscles—especially the chest muscles—caused by the upward, backward, and downward movements of the arms. On this assumption Silvester advised—and so far he has been followed by every other investigator—vigorous traction of the arms. I shall now show that this is a mistake.

After the muscles of a cadaver from the head to the pelvis have been prepared, and the sternum sawn through or not, Silvester's method can be demonstrated perfectly by moving the arms when the pectoralis major and minor, latissimus dorsi, &c., have been severed. Its action is just the same as when the muscles are intact, and from this it is obvious that these muscles cannot be of any importance for artificial respiration. They only become tense when for other reasons movements of the scapulæ, clavicles, sternum, and ribs have been made. And in the apparently dead person the muscle-fibres are too weak, and the fasciæ (at least those of the large chest muscles) too thin, to offer much resistance to the forcible movements of artificial respiration.

Let us see what happens when Silvester's method is applied.

If the patient is lying horizontally, movements of the arm upwards, backwards, and downwards involve the shoulder-joint only until the arms are at right angles to the body, or less; after the lowest part of the shoulder capsule has stretched to its fullest extent any further movement of the arms backwards and downwards is carried out in the shoulder-ring. If the humerus is not abducted too much—and excessive abduction should be avoided because it presses the humerus against the acromion process and starts a false movement of the scapula—the humerus will push against the elastic roof of the shoulder-joint, formed by the acromion, the coraco-acromial ligament and the coracoid. Above this roof runs the clavicle, which is connected with the scapula by the acromioclavicular joint and (above the coracoid) by the strong coracoclavicular ligament, with the first rib by the costoclavicular ligament and the subclavius muscle, and with the sternum by the sternoclavicular joint and the strong sternoclavicular ligament.

The anterior chest muscles do not become tense, and the coracoid does not move backwards, until the arm is at right angles. But when the coracoid has been turned upwards and backwards, so making the pectoralis minor tense, the movements next described have already started. Further movements of the arms backwards and downwards are made possible, and at the same time limited by the mobility of the scapula and the clavicle round an axis which joins the sternal end of the clavicle to the inferior angle of the scapula. The scapula turns by the strong tension in the coraco-acromial and coraco-clavicular ligaments, in such a way that its lowest point deviates laterally 9–11 cm. from its normal position (up to 19 cm. from the vertical column) being fixed, as it were, in position and pressed against the thorax by a common muscle plate formed by the rhomboid, serratus anticus, and latissimus dorsi muscles (Mollier). (See Figure.)

During these movements of the arms backwards and downwards the humerus presses first against the clavicle, which then rotates, forwards and upwards round its own axis, at the sternoclavicular joint. This rotation, owing to the joint connexion with the sternum and to the strong costoclavicular ligament (+ subclavius muscle), causes the sternum and the first rib, and subsequently also the other ribs by the intercostal ligaments (and muscles), to make the movements characteristic of ordinary maximal inspiration. The pectoralis major is of practically

no importance here; the pectoralis minor, by reason of its thicker and tougher tendons, may play some part. At the end of the movements the lowest ribs are drawn up and the latissimus dorsi is stretched.

When the ribs have been rotated to the maximum extent permitted by the costovertebral joints, the costovertebral ligaments and particularly the costotransverse ligaments are so much stretched that the spine is first extended and then takes up a position of lordosis. This extended position is the one most favourable for artificial respiration, for the thoracic cavity is then enlarged as much as possible in all dimensions—longitudinal, transverse, and sagittal. By moderate extension of the spine the abdominal cavity is enlarged, and this relieves the diaphragm from the pressure on its underside of the liver and other abdominal contents and brings it into a better position for inspiration. In the position of lordosis, on the other hand, the abdominal wall is brought nearer the vertebral column, the superficial abdominal fascia becomes more and more stretched, the xiphoid process is pressed back, and the lower ribs are hampered in their movement upwards by the increased tension of the side walls of the abdomen (Strasser); the chest is more or less flattened and the thoracic cavity therefore decreased. Moreover, when the lordosis is carried further the pelvis is lifted up and this throws the abdominal contents against the diaphragm, thus making the thoracic cavity still smaller. Hence I do not think it advisable to continue extension farther than the straightening of the thoracic vertebral column which follows automatically the arm movements indicated above, provided that a *thick* folded coat or blanket has been placed under the back.

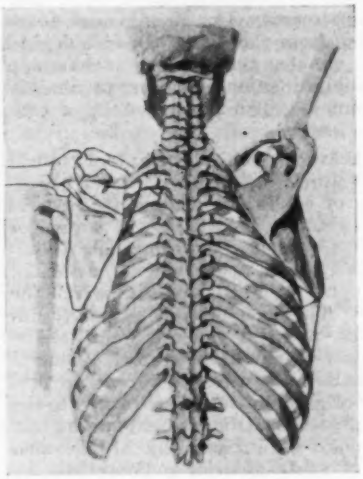


Diagram illustrating abduction and elevation of the arms. (Reproduced from H. Braus, "Anatomie des Menschen," Berlin, 1921.)

HOW TO PERFORM ARTIFICIAL RESPIRATION

For the above reasons I advise the application of Silvester's method as follows.

The mouth and throat are first cleared of water, mucus, mud, artificial teeth, or food debris. The clothes are then loosened and the patient turned on his back. A thin folded coat or blanket may be placed under the back, from the neck to the loins, to steady the patient and allow free movement of the shoulder blades. The lower jaw is pressed forward and the head turned well to one side, bending it back so that the neck is stretched, in order to keep the entrance to the air passage free. The tongue can be held out with forceps (according to Leyden) or bound with a small lace or tape outside the teeth, tying the ends together at the back of the neck.

The method should begin with an *inspiratory* manipulation, expanding the chest and consequently increasing the negative pressure, to relieve the task of the right side of the heart, probably overfilled with blood. The operator kneels on one knee—a position less tiring than any other—and grasps the arms with his thumbs in the bend of the elbow and his fingers enclosing its point. When he moves the arms upwards, backwards, and downwards so that the humerus comes into contact with the coracoacromial ligament, the thumbs turn round the elbows; and when he presses the elbows back alongside the head the thumbs come to lie on the outside of the elbows. This pressure should be firm, and will then, lead to the maximum enlargement of the thorax; the spine will be straightened but the abdominal wall will not be too tense. The patient is left in this position for a second, to allow air to penetrate into the lungs, and then the arms are returned along the same path, upwards, forwards, and downwards, and the elbows are pressed together carefully. This considerably narrows the thorax by shortening the sagittal diameter, without endangering the heart and liver, avoiding at the same time the danger of œdema of the lungs (Jellinek).

The question now arises: What should be the rate? From the investigations of Liljestrand, Bruns, and Rhaesa we know that with a frequency of 17 times a minute every respiration is used to its full value. In order to stimulate the heart a frequency as great as possible would be desirable; on the other hand, it is essential that the inspired air should mix with the air in the lungs. Accordingly I suggest that the correct rate is 15 artificial respirations per minute.

From the description I have given it may appear that an assistant is not strictly necessary, but the latest investigations of Bruns (1934) show that if possible, the heart should be stimulated by massage (70 to 100 times per minute) while artificial respiration is proceeding. Other assistants can rub the body with warm cloths and apply friction to the hands and feet. Oxygen should be administered if it is available, and if a doctor is present he should inject Coramine into a vein or even into the heart. If the heart functions again but respiration remains in abeyance, or if the heart is functioning from the beginning though the patient does not breathe, then artificial respiration must be continued, combined if possible with inhalation of oxygen mixed with 5–7 per cent. carbon dioxide. An injection of lobeline may be given to stimulate the respiratory centre.

Should there be a fracture of one or both arms, Silvester's method cannot be applied and Pacini's (which now, for the first time, in my opinion, can be properly understood), should be considered. This, however, may be too difficult for first-aid men. Therefore I should prefer van Hasselt-Schüller's method or a combination of van Hasselt's and Howard's. I do not agree with Ploman and others that Silvester's method can only be applied to muscular patients, for my anatomical research has shown that its action depends mainly on the joint capsules, strengthening bands and ligaments, and not on the muscles.

BIBLIOGRAPHY

Braus, H.: Anatomie des Menschen, Berlin, 1921.
Bruns, O.: Zentralbl. f. Gewerbehyg., 1921, ix., 289; Klin. Woch., 1923, ii., 2333, and 1927, ix., 1548; Deut. med. Woch., 1927, lix., 1905; Proc. Third Congress for Life-Saving and First-Aid, Amsterdam, 1926.
Bruns, O., and Rhaesa, P.: Beitr. z. Klin. der Tuberk., 1922, l., 6.
Bruns, O., and Schmidt, H.: Med. Klin., 1921, xvii., 1136.

(*Continued at foot of next page*)

NATIONAL CONFERENCE ON MATERNITY AND CHILD WELFARE

(*Concluded from p. 40*)

THE health of the child between the ages of two and five years was further discussed at sessions of the Conference held on July 2nd and 3rd at Queen Mary Hall, Great Russell-street. Quoting Freud's statement that "the little human being is frequently a finished product in his fourth or fifth year," Prof. OLIVE WHEELER, D.Sc. (University College of South Wales and Monmouthshire, Cardiff), suggested that even before school age a child was capable of all the elementary thought processes found in more complicated forms in adults. She maintained further that the emotional growth of the individual in these early years was even more significant for the future, and that patterns of character and behaviour laid down at that time remained throughout life.

The Duchess of ATHOLL, M.P. (chairman), questioned this view on the ground that, carried to its logical conclusion, it would mean that subsequent training and self-discipline were doomed to failure. She took exception to an analogy between plant life and child life, the fundamental difference lying in the fact that the human being had a moral and spiritual nature which she believed was capable of overcoming the effects of even the worst beginnings.

Dr. WILLIAM MOODIE (director, London Child Guidance clinic) at another session upheld the opinion that certain tendencies and attitudes laid down before the age of five persisted right through life and that, though they might be overgrown, they were never destroyed, and might reappear at any time under stress. The habit of crawling, for example, was left behind with babyhood, but many people, faced with the ordeal of passing over a narrow and precipitous ledge, would instinctively drop on their hands and knees for greater safety. Dr. Moodie's experience led him to the conclusion that the public, especially parents, were inclined to exaggerate greatly the effects of trauma as a direct cause of breakdown, instead of recognising it as a danger signal pointing to the presence of underlying instability. He had known children pass through devastating experiences—being sexually assaulted, killing people accidentally, being present at the murder of their parents—and come through quite unscathed. Again, the breaking up of a home was not in itself of great importance; what mattered was the way in which it was broken, and the atmosphere of disturbance, recrimination, and half-truths that had preceded the rupture. The child or adult who broke down had been sensitised to shock beforehand by a long series of strains or stresses. Dr. Moodie had never met a child suffering from the result of psychological trauma pure and simple, though it was common enough to find children suffering from an anxiety state conveyed from a grown-up person by a continued process.

Mr. G. R. GIRDLESTONE (hon. surgeon and clinical director, Wingfield-Morris orthopædic hospital) mentioned four groups of conditions leading to physical disability: (1) congenital defects; (2) static or postural defects; (3) such conditions as tuberculosis of bones and joints, acute osteitis, arthritis, and poliomyelitis; and (4) injuries to any part of the locomotor system. The coöperation of many individuals—midwives, mothers, general practitioners, school medical officers, teachers, the staffs of general and cottage hospitals—was essential to ensure that these various types of case should find their way to the orthopædic hospital at the earliest possible moment. Mr. Girdlestone spoke enthusiastically of the successful treatment of acute anterior poliomyelitis by the administration of convalescent serum. Every child with an illness of the influenza type should be made to kiss his knees morning and evening. The moment he was unable to do so, owing to stiffness of the back or neck due to inflammation of the meninges, the case should be reported to the doctor for exact diagnosis and treatment.

Dr. ETHEL CASSIE (senior assistant medical officer of health for maternity and child welfare, Birmingham), who had investigated statistics of school entrants in Birmingham requiring medical treatment, emphasised the importance of infective conditions among young children. Although these ailments were less numerically impressive than non-infective conditions, they had far-reaching effects on health, happiness, and education. From the point of view of permanent or prolonged disability, tuberculosis, pulmonary infections, mastoid disease, and rheumatism stood high. Home visiting helped in the discovery of children suffering from these defects, and medical inspection made the diagnoses clear, but the real need was for early and prolonged treatment. All medical officers knew the child who had had pneumonia "three times," in other words, who had not recovered from one attack before breaking down again. Such children required long periods of convalescence in good surroundings, until the lungs were clear not only clinically but radiographically. Rheumatic infection also called for prolonged treatment, and the same was true of chronic otorrhœa and sinus infections.

Mr. C. PEYTON BALY, L.D.S., said that the school

(*Bibliography continued from previous page*)

Brosch, A.: Virchows Arch., 1897, cxlix., 266, 460.
Burton-Opitz, B.: Amer. Jour. Physiol., 1922, lxi., 562.
Briscoe, J. C.: THE LANCET, 1927, i., 637, 749, 857.
Eijsselsteijn, G. v.: Die Methoden der künstlichen Atmung, Berlin, 1912.
Franken, H.: Klin. Woch., 1929, viii., 439.
Gunn, J. A.: Brit. Med. Jour., 1921, i., 9.
Hamburger, H. J.: Nederl. tijdsch. v. geneesk., 1909, liii., 1059.
Hasselt, A. W. M. van: De kunstmatige ademhaling tot herstelling van schijndooden, Utrecht, 1847.
Henderson, Y.: Amer. Jour. Physiol., 1910; Amer. Jour. Pub. Health, 1928, xviii., 22.
Heymans, C.: Arch. Internat. de pharmacodyn. et de thérap., 1922, xxvi., 14.
Howard, B.: Trans. Amer. Med. Assoc., 1871; THE LANCET, 1877, ii., 194; 1878, i., 748.
Jellinek, S.: Wien. med. Woch., 1931, lxxxi., 1643.
Keith, A.: THE LANCET, 1909, i., 745, 825, 895.
Liljestrand, Wollin, and Nilsson: Skand. Arch. f. Physiol., 1913, xxix., 149; Berlin. klin. Woch., 1914, ii., 1950.
Loewy, A., and Meyer, G.: Ibid., 1908, i., 1134; 1909, i., 207 and 1001; Ueber künstliche Atmung mit und ohne Zufuhr von hochprozentigem Sauerstoff, Berlin, 1919.
Magnus, R.: Arch. f. exper. Path. u. Pharm., 1902, xlvii., 200.
Mollier, S.: Plastische Anatomie, Munich, 1924.
Pacini, Ph.: Jour. de Bruxelles, 1871.
Ploman, K. G.: Skand. Arch. f. Physiol., 1906, xviii., 57.
Roth, O.: Zentralbl. f. Chir., 1925, lii., 1122.
Rost, E.: Zeits. f. d. ges. exper. Med., 1932, lxxxii., 255.
Schäfer, E. A. S.: Trans. Roy. Med. and Chir. Soc. of London, 1904, lxxvii., 609; Proc. Roy. Soc. Edin., 1903–04, xxv., 39; Berlin. klin. Woch., 1909, xlvi., 579.
Schaeffer, Y., and Cot, C.: Bull. de l'Acad. de Méd., 1931, cv., 758.
Schüller, M.: Berlin. klin. Woch., 1879, xvi., 319.
Silvester, H. R.: Brit. Med. Jour., 1858, ii., 576.
Strasser, H.: Lehrbuch der Muskel und Gelenkmechanik, Berlin, 1917.
Thiel, K.: Ergebn. d. inn. Med., 1928, xxxiii., 406; Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1928, xl., 656; Deut. med. Woch., 1930, lxii., 782; Zeits. f. exper. Med., 1933, lxxxviii., 207, 233, 255.
Winterstein, H.: Zentralbl. f. Physiol., 1910, xxiv., 208; Münch. med. Woch., 1917, lxiv., 153; Pflügers Arch. f. Physiol., 1929, ccxxii., 410.
Also Report of Comm. on resuscitation of apparently drowned, Proc. Roy. Soc. Med., 1908, ii., 1.

dental service (though too often refused by parents) had done a good deal to improve the teeth of school leavers, but the teeth of entrants were still in a lamentable condition. Many authorities failed to make the best use of their dentists, the service being judged by the number of operations performed rather than by the condition of the children. Too much of the dentist's time was taken up by clerical work and treatment of casuals, allowing no time for instruction of teachers, children, and parents. The most valuable aids to sound teeth were clean fresh foods, especially milk and fruits, sunlight and air free from smoke pollution, cleaner habits, and more dentists to care for the mouths of mothers and children.

Dr. A. DOYNE BELL (chief assistant, children's department, St. Thomas's Hospital) pointed out that the time between two and five years of age was the period of the child's maximum susceptibility to infectious disease, and at the same time he was coming increasingly in contact with infections owing to his developing gregariousness and growing ability to get about. Other factors contributing to the high incidence of infectious disease at this age were faulty nutrition and insufficient sleep, the latter being bound up with the problem of overcrowding. The object of studying dietetics was not to produce a child of standard weight and height but a healthy child. The financial problem of feeding a family could not be divorced from the dietetic problem. It was often an economic necessity to feed the young child on the same food as his parents, but this necessity could be turned into a virtue by teaching the parents to eat wholesome, well-cooked food. There was a tendency to discriminate too little between infected tonsils and large tonsils. The removal of infected tonsils, even in a young child, was a justifiable preventive measure, but the removal of tonsils merely because they were large—a normal condition in childhood—was to be deplored.

BEIT MEMORIAL TRUST FOR MEDICAL RESEARCH

A MEETING of the trustees of the Beit Memorial Fellowships for Medical Research was held on July 12th, for the election of Fellows and other business.

The trustees expressed their deep regret at the recent death of Sir John Rose Bradford, F.R.S., who had been an original member of the advisory board in 1909 and had, together with the late Sir James Kingston Fowler, taken a most important share in advising Sir Otto Beit upon the foundation of the trust. Sir John remained on the Advisory Board for 12 years, and subsequently gave valuable service as a trustee for the last five years of his life.

Confirmation was given to the appointment of the Lord Macmillan as a trustee, and Prof. T. R. Elliott, F.R.S., was also appointed a trustee in succession to Sir John Rose Bradford. The trustees accepted with regret the resignation of Sir Charles Sherrington, F.R.S., from the advisory board after 24 years of service throughout which his wisdom and special knowledge had given invaluable aid to the work of the trust. They appointed in his place Dr. E. D. Adrian, F.R.S., Foulerton professor of the Royal Society.

The trustees noted with pleasure that two members of the advisory board had received honour recently from the King, Sir F. Gowland Hopkins being granted the Order of Merit, and Sir Patrick Laidlaw that of knighthood. Fellowships during the year 1934–1935 were held by 26 workers. Among the appointments gained during the year by past Fellows may be noted that of Dr. J. R. Marrack to the professorship of chemical pathology, University of London, at the London Hospital; of Dr. A. St. G. Huggett to the professorship of physiology, University of London, at St. Mary's Hospital; of Dr. W. P. Kennedy to the professorship of biology, Royal Medical College, Bagdad; and of Dr. F. H. Smirk to the professorship of pharmacology in the Egyptian University, Cairo. Dr. W. R. Aykroyd has been appointed director of nutritional research under the Indian Research Fund Association. Dr. S. Zuckerman was awarded the W. J. Mickle prize fellowship for 1935 of the University of London.

The Trustees did not elect this year a Beit professorial Fellow, but they hope to make such an appointment as soon as a suitable occasion arises.

The following elections to Fellowships were made :—

Senior Fellowship

ROBERT HILL, M.A. Camb. To continue his studies on the respiratory function of hæmoglobin. At the Physiological Laboratory and the Molteno Institute, University of Cambridge.

Fourth Year Fellowships

ROBERT GADDIE, B.Sc., Ph.D. Edin. To continue his research on the metabolism of heart muscle. At the departments of medical chemistry and materia medica, University of Edinburgh.

JOHN MICHAEL ROBSON, D.Sc., M.D. Leeds. To continue his work on the hormonic factors concerned in the maintenance of pregnancy and initiation of parturition. At the Institute of Animal Genetics, University of Edinburgh, or the School of Agriculture, University of Cambridge.

FRANK GEORGE YOUNG, B.Sc., Ph.D. Lond. To study the diabetogenic factors of the anterior pituitary gland. At the department of physiology and biochemistry, University College, London.

Junior Fellowships

ALEXANDER ROBERTUS TODD, B.Sc. Glasg., Ph.D. Frankfurt, Ph.D. Oxon. Carnegie research scholar 1928. Proposed research : The molecular structure of vitamin B_1. At the department of medical chemistry, University of Edinburgh.

ROBERT JOHN KELLAR, M.B., Edin., M.C.O.G. Leckie-Mactier Fellow in medical research 1934–35. Proposed research : The problem of nephritis and high blood pressure associated with pregnancy. At the London laboratories of the Royal College of Surgeons, and the obstetric unit, University College Hospital, London.

NORMAN LOWTHER EDSON, M.B., N.Z. Medical travelling scholarship, University of New Zealand 1930. Proposed research: Fat metabolism and ketogenesis. At the Institute of Biochemistry, University of Cambridge.

MYER HEAD SALAMAN, M.D. Camb. Research on virus diseases under Prof. S. P. Bedson, F.R.S. At the London Hospital 1932–34. Proposed research : Investigation of the antigenic structure of the vaccinia virus. At the Lister Institute of Preventive Medicine, London.

JAMES DAVIDSON FULTON, B.Sc., Ph.D., M.B.Glasg. Chemist to the Manchester Committee on Cancer 1928-30. Proposed research : The experimental chemotherapy of malaria. At the London School of Hygiene & Tropical Medicine.

ADÈLE HELEN ROSENHEIM, M.A. Camb., Ph.D. Lond. Grocers' Company Research Scholarship 1931–33. Proposed research : The chemical nature of antibodies, especially those in antityphoid sera. At the Lister Institute of Medicine, London.

All correspondence of Fellows and candidates should be addressed to Prof. T. R. Elliott, F.R.S., hon. secretary, Beit Memorial Fellowships, University College Hospital Medical School, London, W.C.1.

UNITED STATES OF AMERICA

(FROM AN OCCASIONAL CORRESPONDENT)

FINANCIAL AID FOR PUBLIC HEALTH

THE Congress has at length taken cognisance of the present inadequate provision for public health in large areas of the nation. Only 528 out of 3000 counties are served by full time officials, and even among these comparatively few have degrees in public health. The Social Security Act just passed by Congress makes provision for federal aid amounting to 8,000,000 dollars to be distributed through the public health service, and for a further 6,650,000 dollars to be distributed for maternal and child health and for crippled children through the children's bureau. The public health service is in the Treasury department under the special supervision of Miss Josephine Roche, assistant secretary of the Treasury. The children's bureau is in the Department of Labour. There will, however, be some attempt to coördinate the administration of these two funds both intended for public health purposes. The fact that the present assistant chief of the children's bureau is a physician will probably remove some of the antagonism formerly felt by the organised medical profession to work done by this bureau under the provisions of the Sheppard-Towner Act.

A meeting of State and territorial health officers was held in Washington on June 17th and 18th, at which agreement was reached with officers of the U.S. Public Health Service regarding standards of public health administration which must be met to justify reception of federal subsidy, the basis on which the 8,000,000 dollars would be allotted to the several States, and the qualifications of training which in future are to be required of public health personnel.

A qualified full-time State health officer must be in charge of the State health department receiving subsidy. The department must give adequate administrative guidance to local health services, and must include competent divisions of vital statistics, laboratories, epidemiology, and environmental sanitation. No subsidy will be allocated to any local health unit whose staff does not include at least one full time health officer, two nurses, one sanitarian (sanitary inspector), and one clerk. When more than one county is included in an administrative district there must be at least one public health nurse in every county.

Health officers in charge of an area having 50,000 or more population must have had at least a year's training in a course of public health which includes specified courses (including biostatistics and epidemiology), and which corresponds to a modern university training leading to the certificate in public health (C.P.H.). Health officers of smaller units must have specialised in public health work before they were 35 years of age. Preference is given to those who have had one or more years' experience in the general practice of medicine. All health officers who have not degrees in public health must be prepared to take post-graduate training. Provision is made under the Act to assist them in obtaining this training. It is realised however that present academic facilities will limit the number that can be trained in the immediate future. It is clearly intended that a standard equivalent to the British standard shall be reached as rapidly as the training facilities will permit. Standards are laid down similarly for the training of public health nurses and of sanitarians.

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

EDINBURGH'S HEALTH

SOME interesting statistics are given by Dr. John Guy, medical officer of health in the annual report for 1934 on the health of the city of Edinburgh. The birth-rate for the year was 15·7 which shows an increase over the previous year. Of the total births 6·4 per cent. were illegitimate. The death-rate was 12·8. The infant mortality-rate was the lowest on record for the city, being 62 deaths for 1000 live births. The effect of re-housing tenants from condemned buildings is shown by the health figures for the Prestonfield re-housing area, to which the tenants in the St. Leonards improvement scheme were transferred en bloc. This has resulted in a reduction of the death-rate for this community from 21·9 in 1927 to 7·7 in 1934, a reduction of the death-rate from pulmonary tuberculosis from 1·5 to 0·3, and a reduction in the epidemic diseases death-rate of from 3·4 to 0·3. The greatest improvement was observed in the infantile mortality-rate, which in 1927 was 132 per 1000 births in the old area but only 28 per 1000 births in the new area in 1934. The problem of overcrowding is still acute, and the new cases of overcrowding notified during the year are almost equal in number to those which were dealt with by providing families with larger houses. The pulmonary tuberculosis death-rate for the year was 0·66 per 1000, which makes a new low record for the city, and is less than half the death-rate 34 years ago. 4530 patients were admitted to the City Hospital for infectious diseases. No case of diphtheria or scarlet fever occurred among the nursing staff, a feature which Dr. Guy attributes to active methods of immunization. In this connexion Dr. Guy emphasises the importance of the campaign for immunization against diphtheria. An arrangement has been made whereby all medical practitioners in the city can give this protection free of charge to all who apply. The arrangement whereby the professor of bacteriology acts as director of the bacteriological services has proved very satisfactory.

The work of the municipal general hospitals continues to increase, and nearly 6000 patients were treated during the year. The arrangement whereby there are resident students in the Western General Hospital has proved to be of great value. Dr. Guy went to show that the children now leaving school are physically and medically fitter than they have ever been, but that this improvement was not so marked in the case of those entering school for the first time. There is however a decided reduction in the incidence of rickets and tuberculosis. In 1907 5·8 per cent. of the boys and 7·8 per cent. of the girls entering school for the first time were found to have acquired deformities; the corresponding figures for last year were 0·5 and 0·4 respectively. Dr. Guy concluded that the Edinburgh statistics compared favourably with those of other large towns, and said that there can be no doubt that the steps taken to demolish overcrowded and derelict houses in the city are having a beneficial effect on the health and well-being of the community.

CORRESPONDENCE

TREATMENT OF TUBERCULOSIS OF THE LUNGS BY MEANS OF BI-LATERAL COLLAPSE

UNEXPLAINED DEATH

To the Editor of THE LANCET

SIR,—This history and description of a case of death occurring three months after the establishment of bi-lateral artificial pneumothorax treatment, is sent to THE LANCET because of the comparative rarity of such a catastrophe, and because I am quite unable to give any explanation why the patient succumbed.

Mrs.——, aged 45 years, was found to be suffering from Pulmonary Tuberculosis in 1928, on the occasion of a first and only hæmoptysis. She had previously suffered from quinsy, dengue, measles, and whooping-cough. All her ascendants, her husband, and her only child were free from tuberculosis.

A left artificial pneumothorax was induced in the Brompton Hospital in October, 1928, and she was then sent to the Frimley Sanatorium, and stayed there from February to October, 1929. Refills were continued during residence at home till 1932 when collapse was abandoned as all symptoms of disease of the lungs had subsided and skiagraphic examination of them failed to reveal any evidence of active disease. From 1932 onwards, she remained well until the middle of 1934 when expectoration of tubercle bacilli gradually returned and she began to lose weight. These symptoms did not abate with home treatment on sanatorium lines and she was readmitted to the Brompton Hospital on March 11th, 1935, when she was found to have a raised temperature—99° in the evening, under-weightness signs of æro-œdema, bronchial breathing and dyspneumonophony at the upper part of the left lung. On skiagraphic examination extensive infiltration, fibrosis, and excavation in the upper and middle zones of the left lung and moderate widespread infiltration in all zones of the right lung were found.

On March 13th, 1935, pneumothorax was re-established on the left side by thoraco-puncture at the angle of the scapula, after unsuccessful attempts had been made in the axilla. Owing to numerous adhesions the collapse induced remained small and mainly localised at the posterior part of the left lower lobe. On March 18th, 1935, a pneumothorax was successfully established on the right side and partial collapse was obtained; complete collapse being prevented by the presence of adhesions which were much less developed than on the left side. The patient remained in the hospital until May 17th, 1935, by which time simultaneous weekly refills were being given, the right chest receiving on each occasion 400 c.cm., giving a final mean pressure of −2, the left chest receiving 250 c.cm., giving a final mean pressure of +1.

Her condition had improved very considerably by the time she left the hospital, all fever and expectoration having ceased, although the large cavity present at the apex of the left lung was only moderately compressed; she returned home to the country and she visited the refilling department of the Brompton Hospital each week for the next three weeks and had the same quantity of air introduced each time. At the fourth visit to the hospital on June 13th, 1935, she looked and felt very well; screening showed slight re-expansion of the right lung and the following refills were given: right lung 450 c.cm., giving a mean pressure of −2; left lung 250 c.cm., giving a mean pressure of +4. On her way from the hospital to South Kensington Station she began to feel so breathless that she considered it wise to return to the hospital, becoming ill shortly after admission. The intrapleural pressures were found to be: right +5, and left +15, and air was removed from each pleural cavity, the final pressures being: right −5, and left −1. Recovery was immediate but she was detained in the hospital over-night for close observation; when seen at 11 P.M. and in the early hours of the morning she seemed quite well, but when she awoke at 8 A.M., after a good night's sleep, she again became very ill and died suddenly.

Post-mortem examination was carried out by Dr. E. E. Atkin. Chest: bi-lateral pneumothorax; no effusion in either pleural cavity; strong adhesions over the upper part of each lung especially the left; universal pleural adhesions over the anterior and lateral surfaces of the lower left lung; the lungs were inflated through the trachea, under water, but no evidence of fistula could be found in either lung. On section, the right lung revealed fibroid tuberculosis at the apex and foci of recent tuberculosis infiltration in the lower parts; the left lung showed a large cavity near the apex containing pus and foci of tuberculosis infiltration in the lung tissue behind and below it. There was no pulmonary thrombosis. The heart showed no abnormality in muscle, valves, or coronary arteries; no abnormality was found in the brain and all other organs were normal except the larynx which showed slight ulceration of the left vocal chord.

The onset of shortness of breath and the increase of intrapleural pressures found after its onset on June 13th suggested that spontaneous pneumothorax had occurred, and the prompt recovery when air was removed confirmed this view. It was very remarkable that the patient should have had a comfortable night after the removal of air and yet should have died suddenly fourteen hours after such removal. At no time, whether at the second induction of pneumothorax or at any refilling, had she shown evidence of plural shock. There was no evidence that would lead one to suspect that she was a drug-addict.

I hope that some other readers of THE LANCET will be able to communicate to you an adequate explanation for the untimely end of this patient.

I am, Sir, your faithfully,

Harley-street, W., July 12th. H. BATTY SHAW.

THE FUTURE OF PHARMACY

To the Editor of THE LANCET

SIR,—In a letter in your issue of July 13th, under this heading, Dr. S. C. Dyke questioned a statement which I made in my address to the British Pharmaceutical Conference suggesting that it would be of assistance to the doctor if he could depend upon the pharmacist to undertake certain biochemical examinations. It is not to be expected that my opinions on this question will coincide with those of the Association of Clinical Pathologists. Nevertheless, without engaging in a controversy which is unlikely to lead either of us to alter our opinions, I may perhaps be permitted to record certain matters which are facts rather than opinions which led me to the suggestions contained in my address.

Firstly, the fields of physiology and biochemistry should not be, and to-day are not, the exclusive province of the medical profession. There are distinguished physiologists and biochemists who do not hold a medical qualification. Next, the medical qualification by itself, while conferring obvious advantages upon a worker in these fields, is itself no guarantee of competency in them. Much of the work is essentially chemical work, for which a chemical training and outlook are required. Thirdly, there are to-day pharmacists regularly engaged in the biochemical examination of pathological specimens both in private practice and in hospitals. Again, the pathological laboratory, as Dr. Dyke truly points out, is not the place where a complete diagnosis can be made. Such a diagnosis involves the services of more experts than the chemical pathologist alone,

and it is for the physician in charge of the case to make the final diagnosis after he has received reports from the clinical pathologist, the radiologist, the bacteriologist and, it may be, other specialists. It is the function of no one of these to proceed to an ultimate diagnosis.

It is considerations such as these which lead me to the conclusion that the medical qualification, although of value, is by no means an essential for persons engaged in this work. I feel myself that one of the most unfortunate tendencies in the medical profession is this refusal to look beyond the pages of the Medical Register. Medicine is rapidly changing, and it is impossible to-day for the medical practitioner to become a specialist in every branch of knowledge which impinges upon medicine. The informed public may well look a little cynically upon a calling which refuses to look beyond its own boundaries and to accept competent qualified assistance, quite apart from quackery, which chances to be outside its own ranks.

I am, Sir, yours faithfully,

F. W. CROSSLEY-HOLLAND,
Chairman, British Pharmaceutical Conference.

Bloomsbury-square, London, W.C., 15th July.

PROGNOSIS OF SIMPLE MOLES AND MELANOTIC SARCOMA

To the Editor of THE LANCET

SIR,—In his article on this subject in your issue of June 15th Mr. Sampson Handley makes the statement that "Though melanotic sarcoma is fortunately a rare disease . . ." quoting the Massachusetts figures in support. The statement presumably refers to the incidence of melanomas amongst the white race in temperate countries; it is certainly not correct if applied to the dark-skinned races in the tropics of Africa. The following figures may be of some interest in this connexion. In these laboratories during the years 1930–35 (ending June 1935) 438 specimens were reported as malignant tumours and of these 31 were melanomas, which is approximately 7 per cent. All these melanomas occurred in Sudanese and were sent in from all parts of the Sudan. Eighteen were from the foot, 7 from other parts of the leg, 4 from the eye, 1 from the breast, and 1 from the tip of the index finger. Similar figures are reported from the Medical Research Laboratories, Lagos.[1] For the years 1930–33 90 malignant tumours were reported, of which 10 were melanomas, all from the foot. The Nigerian workers have previously drawn attention to the predilection of these tumours for the foot, and it is of interest to note a similar disproportionate frequency in the Sudan figures. I am unable to suggest any explanation of this finding, at least for the Sudan cases.

One is led to infer from the statements in the text-books that melanoma is a rare tumour in the negro race—e.g., MacCallum[2] states "... we were surprised to find that all the 10 cases of melanoma that were observed at autopsy here were in white persons, although in the course of the 12,000 autopsies in which these occurred the proportion of negroes is high." Ewing[3] says "In the negro melanotic tumours are rarely recorded, but on account of the difficulty of diagnosis it is probable that many are overlooked." The occurrence of melanomas in white or grey horses only was long ago pointed out by Virchow, and a somewhat dubious analogy is often drawn between this observation and the apparently greater incidence of melanomas in white persons. The Sudan and Nigerian figures quoted above are absolutely at variance with the common belief that melanoma is a rare tumour in the darkly pigmented races. In this connexion it is better to avoid the term negro, as although ethnologically the bulk of the Sudanese are not negro there occurs a considerable mixture of negro blood through the country.

I think it is reasonable to conclude that a tumour which constitutes from 7–12 per cent. of all malignant growths must be regarded as comparatively common; and indeed suggests a greater liability of the darker skinned races of Africa to this neoplasm.

I am, Sir, yours faithfully,

Khartoum, June 29th. E. S. HORGAN.

[1] Annual Reports on the Medical and Health Services, Nigeria, 1930–33.

[2] MacCallum: A Text-book of Pathology. 1932.

[3] Ewing: Neoplastic Diseases. 1931.

GOLD TREATMENT OF ASTHMA

To the Editor of THE LANCET

SIR,—In continuation of my letter which you published last August I would like to record our further progress in the treatment of asthma with gold preparations. A hundred cases have been treated, 60 of them at the Kasr-El-Ainy Hospital under the care of Dr. H. Abu Khatwa, resident registrar, and the sum total of our experience can be expressed in one sentence: In order to get the full benefit of the treatment, one must eliminate all obvious causes of irritation before instituting it; and unless this is done no effect whatever can be expected from the drug.

I feel sure that in all cases of failure there must have been some cause of irritation which we could not identify, and which has thus remained in operation and prevented success. The causes we have come across most often, and which were eliminated before the treatment was made successful, were: (1) Sinusitis (purulent or catarrhal), nasal polypi, and other irritative conditions of the nasal mucous membrane. (2) Sluggish liver—conditions spoken of by French authors as "insuffisances hépatiques." In these cases not only does the treatment fail, but the gold cannot be tolerated and complications of a dangerous nature may appear. Chronic cholecystitis and gall-stones can become contra-indications, leading to failure or intolerance. (3) Intestinal parasites (particularly amœba but also ankylostoma and ascaris). In some of our cases four injections of gold were given without the least response, but when we got rid of the parasite, the asthmatic attacks disappeared without any further trouble.

I must also say a few words about the complications that sometimes developed owing to intolerance of the drug. As mentioned in my first letter, fever was very common, especially in summer, but was never serious, and usually passed off in a few hours. The most important complication, however, is dermatitis, which may be very severe, and is accompanied by high fever. Happily we have had it only in two cases, and both ultimately recovered. Jaundice has appeared in two private cases, lasting about three weeks and then passing off. I still find extract of liver, given subcutaneously and accompanied by intravenous injections of thiosulphate of soda or magnesium (10 per cent.) in doses of 10 c.cm., to be the best treatment for all complications arising from intolerance of gold.

Of the 60 cases treated in the hospital 6 have

shown relapses after a year's freedom from attacks; and so have 2 out of 40 in my private practice. In all these cases a second course of treatment has given lasting relief. Four of my private patients had heart diseases, and they were all relieved of asthmatic attacks after having stood very well a course of four injections each. For no apparent reason 6 of the 60 hospital cases and 6 of the 40 private ones did not respond at all to the remedy.

I am, Sir, yours faithfully,

G. P. G. SOBHY,
Associate professor of medicine in the Egyptian University.

Cairo, July 3rd.

GOLD TREATMENT OF TUBERCULOSIS

To the Editor of THE LANCET

SIR,—In reply to Dr. Shaw's criticism of our paper, we cannot see any force in his objection to the type of case we used for the test. Does he seriously consider that the administration of gold to our moribund cases and to cases in which the progress was eminently favourable would have improved the value of our statistics?

Actually in the most significant period, 1932–34, out of 299 cases 71 were hopeless and 81 were mild cases. The inclusion of these admittedly dilutes the statistical evidence for good or ill, but does not necessarily falsify it compared with the "no gold" series. As regards dosage there is no mystical significance in his figure of 5 g. considering our patients' weights varied between six and twelve stones. Some of our patients received less than this amount and some more, all depending on reactions and progress based on clinical and radiographical observations.

We did not mention our repeated radiographical investigations, as this is as much a routine of sanatorium treatment nowadays as taking a patient's temperature. Our paper was headed a statistical study and we confined our remarks to that aspect only. Dr. Shaw does not seem to be aware that Crysalbin and Sanocrysin are different trade names for gold sodium thiosulphate as he accuses us of giving all our injections *intramuscularly* (his italics). This compound is not suitable for intramuscular injection. Actually 78 per cent. of those treated received intravenous gold sodium thiosulphate. A very large number of publications favourable to gold treatment in tuberculosis by many "authorities" are totally devoid of any control series and are of no evidential value as to its benefit.

In spite of Dr. Shaw's castigation, we unrepentantly maintain that, if in a series of 299 cases one half receive a new treatment, some improvement on previous results should be shown, if the treatment is of any striking value, compared with a similar control series, more especially when we showed that the new treatment was applied during a period when the fatality of the disease was tending to fall in this age-group compared with the former group. When we find that in the pre-gold period quiescence or improvement of disease occurred in 66·2 per cent. of the patients treated by sanatorium methods, whilst during the period 1932–34 when half our cases received gold the corresponding figure was only 63·3 per cent., we cannot view our results with any satisfaction.

We are, Sir, yours faithfully,

B. A. PETERS,
C. SHORT.

Pill, near Bristol, July 15th.

GOLD TREATMENT OF RHEUMATOID ARTHRITIS

To the Editor of THE LANCET

SIR,—With the general tenor of Dr. Hartfall and Dr. Garland's article we find ourselves in complete agreement and we note they confirm our previous work in stating that chrysotherapy is the most important form of treatment in rheumatoid arthritis.

We at our clinics have always used the intramuscular method and we believe that fatalities can be avoided if these principles are borne in mind: (1) to start with small doses; (2) to observe carefully the patient's reaction and, should there be any, to avoid larger doses; (3) to use the intramuscular route; (4) to space the doses correctly. We have described our technique fully in the *Practitioner* of June, 1935.

We believe that small total doses frequently administered are preferable to larger massive doses, and it has been our practice to give courses with a maximum of 1·3 g.—this to be followed by an interval of 4–6 weeks before the second course is attempted. It must be emphasised that the treatment is a long one and will last *at least* nine months.

By these methods we have had no anxiety in any case—though there have been skin reactions of various types in a few cases. We agree with Dr. Hartfall and Dr. Garland that thiosulphate, liver, &c., seem of little use once there has been a reaction, but are of the opinion that collosol sulphur in drachm doses at night is a very helpful adjuvant.

We feel the analogy of syphilitic treatment is very apt. Arsenobenzol is also dangerous if given unsuitably or in large doses. Skin and general reactions likewise occur—and like chrysotherapy the treatment is long and numerous courses are required.

In conclusion, our results to date which we hope soon to publish are most encouraging. Several completely disabled cases are now resuming their activity though perhaps in a modified form. Patients themselves who are very good judges of their progress in this condition state they feel better, have less pain and more movement. Clinically there can be no doubt at all of the value of the treatment in many of these intractable cases—many of whom had had all the usual remedies over a long period of time before chrysotherapy. It is only fair to add that chrysotherapy is a method and we use in addition physiotherapeutic measures where indicated. Many of our cases, however, have not had this form of treatment.

We do not think gold is more dangerous if used as above than arsenic compounds or even digitalis; but like all therapeutic measures the physician must learn the uses of his drug—in the right case its dose and its reactions.

Finally, we would add that although no curative measure is obtained in osteoarthritis, the treatment seems to relieve pain and improve the general condition. We must stress the point that some pain is experienced during treatment—indeed many of our best results have suffered in this way. This is an indication to continue and not to give up. We feel the last attitude is responsible for some of the unsuccessful results which have been obtained.

I am, Sir, yours faithfully,

GERALD SLOT,
P. M. DEVILLE.

Harley-street, W., July 13th.

AN EPIDEMIC OF HERPES

To the Editor of THE LANCET

SIR,—Herpes of the lip and face is not perhaps unusual among individuals exposed to sun rays, but an epidemic appears to me of some interest. The manager of a clothing factory asked for my advice, as 14 of his employees were suffering from swollen lips and a rash round the mouth. Two had been to hospital and reported that they had been told they had erysipelas.

On inquiry at the factory the condition was obviously one of herpes of the lips and face. The employees on the previous Saturday had been taken for a day's outing to the sea, returning at midnight in an open charabanc. The occurrence of this condition among approximately 24 per cent. of persons exposed would appear to be high. The sufferers were of varying types of complexion, and some had bathed, some had eaten shell-fish, and some had done neither. All complained of the condition commencing with irritation on the Monday evening.

I am, Sir, yours faithfully,

JOHN C. BRIDGE,

Senior Medical Inspector of Factories, Home Office, S.W.

July 13th.

HEADACHES

To the Editor of THE LANCET

SIR,—Respect for the views of Sir Edmund Spriggs, and admiration for the contents of his article on headaches, do not prevent me asking for a further explanation of certain categories into which he places the nervous patient. He distinguishes three groups: the first being "neurotic" (subdivided into "nervous" and "neurasthenia"); the second being "tired" (subdivided into "nervous exhaustion" and "overtired"); and the third being "worried," with four subdivisions. His brief descriptions do not convey any clear idea of symptomatology.

I feel sure there are many who would appreciate a more complete discussion of his terminology, explaining in particular what he means by "neurotic," "nervous," "neurasthenia," and "nervous exhaustion."

I speak, Sir, as a clinician anxious to understand something of the value of the nervous factor. Sir Edmund Spriggs's classification does not seem in accordance with any modern concepts. Perhaps he will define what his terminology involves.

I am, Sir, yours faithfully,

Wimpole-street, W., July 6th. JOSEPH GEOGHEGAN.

BLEEDING OF TRANSFUSION DONORS

To the Editor of THE LANCET

SIR,—May I make the following observations on the method of bleeding transfusion donors described by Dr. Marriott and Dr. Kekwick in your last issue? (1) In my experience, a special needle requiring the use of novocain for its insertion is never necessary, an ordinary wide-bore serum needle being perfectly adequate if carefully chosen. With this, a pint of blood is easily withdrawn without the use of suction. In view of the fact that he may be called upon again within a short period, a volunteer donor should not be asked to give more than this. It may also be mentioned that he is always informed by the Red Cross Society of the amount he has given. (2) In my own experience, though suction may with advantage be employed, the use of too drastic a suction defeats its own end. The suction of a rubber bulb of moderately thick wall is all that is necessary to give a stream of blood the size of an ordinary lead pencil. Stronger suction cannot make a vein yield more blood than its lumen will carry, and only tends to suck its walls together, thus diminishing or even occluding the lumen. It also gives rise (as I can testify from my own experience as a donor) to a highly unpleasant vibration in the vein, the walls of which are converted into a sort of reed by the suction. This happens frequently, even if the suction is only that provided by a rubber bulb with a fairly thick wall.

While suction may be employed with advantage, I cannot agree that it should be more than that provided by a rubber bulb such as Dr. Marriott and Dr. Kekwick condemn.

I am, Sir, yours faithfully,

J. W. SHACKLE, M.R.C.S., L.R.C.P.

Grosvenor-street, W., July 15th.

"ULTRA SHORT WAVES"

To the Editor of THE LANCET

SIR,—In view of the interest in claims concerning the so-called specific action of "Ultra Short Waves" (i.e., an action not accountable as a heat effect, and having a short wave length dependence), and more especially that high-frequency currents corresponding to a wave length of 3·4 metres have a specific effect on rat tumours, Dr. H. J. Taylor has carried out a series of observations at the St. John Clinic and Institute of Physical Medicine which led him to conclude that there is no such specific effect. Wave lengths of 3·4 metres and 4·5 metres are effective in destroying small rat tumours growing in the flanks of the animals, at the same time producing damage to the surrounding tissues.

The tumours may be necrosed equally well by both these wave lengths and also with vastly different doses of ultra short waves. For example, a small dose of U.S.W. without cooling is just as effective as a high dose with cooling. The results will be published later in detail, but I would like to point out that the conclusion reached is that the effect is a heat effect, a conclusion which confirms that of Dr. A. Eidinow, based on the nature of the pathological changes produced by ultra short waves.

I am, Sir, yours faithfully,

London, S.W., July 15th. LEONARD HILL.

THE INCIDENCE OF PROCTITIS IN GONORRHŒA OF FEMALES

To the Editor of THE LANCET

SIR,—I was much interested in the article on this subject by Dr. Clements and Dr. Hughes in THE LANCET of July 6th, 1935. I have been aware of the danger of missing this infection ever since I have had charge of the female V.D. department at Guy's from 1917. It has always been part of the routine at this clinic to take films and cultures from the rectum in suspected cases of rectal gonorrhœa and, in more recent years, the majority of cases attending for vaginal discharge have had initial rectal tests taken. The percentage of positive cases has been markedly lower than that obtained at St. Thomas's. This may be due to the fact that if the initial rectal

tests are negative and no further signs and symptoms develop, the rectal tests are not repeated until final tests for cure are made. In the definitively positive cases of rectal infection, the patients almost invariably have symptoms such as discharge, soreness, and feeling of weight and "piles." A small inflamed tag at the anus leads one to suspect rectal gonorrhœa. In suspected cases a small proctoscope is passed and material taken from obviously infected parts, which, at the same time, are touched lightly with solid $AgNO_3$. This treatment is followed up by the frequent use of suppositories of acriflavine or protargol.

In future, intermediate rectal tests will certainly be taken, as from the report from St. Thomas's Clinic it would seem that possibly cases have been overlooked.

I am, Sir, yours faithfully,

Devonshire-place, W., July 16th. MORNA RAWLINS.

THE UNHAPPY COLON

To the Editor of THE LANCET

SIR,—Dr. Hurst would have us regard all cases of constipation as due to inefficiency of the conditioned reflex established in infancy, by sitting the child on the pot and maintained by the familiar associations that in later life supersede and replace this earlier stimulus. In his opinion, therefore, humanity must be educated in order to carry out efficiently this physiological act.

That the act is a reflex one is, of course, true. But why have to call on artificial stimuli? Surely the periodic activity of the colon from *start to finish* is the natural response to the taking of food. Why should the gastro-colic reflex action end at the pelvi-rectal junction? The upper valve of Houston may have some value in promoting control of the final expulsive act and throw less strain on the anal sphincter, but not being a true sphincter it cannot be intended to regulate the output in the manner Dr. Hurst describes.

Observation of the habits of infants before they are introduced to the once-a-day pot, of humanity in its more primitive state and of the highest apes, shows that the wave of contraction set up in the colon in response to the taking of food suffices to fill the rectum and that there is no obstruction to the completion of the act. Inhibition is deliberately set up in the nurseries of civilisation and maintained in early life, and this is the real origin of constipation.

I am in thorough agreement with Dr. Hurst as to the perniciousness of the habitual aperient. But education must be along the lines of suitable dietary from infancy onwards, not in setting up artificial stimuli and "conditioning" a natural process. After all, we most of us have an efficient anal sphincter to enable us to cope with the requirements of decency and order.

I am, Sir, yours faithfully,

S. HENNING BELFRAGE.

Seymour-street, W., July 16th.

PUBLIC HEALTH

Another Report on Maternal Mortality and Morbidity

AT a time when maternal mortality is much under discussion the publication of a report[1] by two medical officers of the Department of Health for Scotland is particularly opportune.

The authors, Dr. Charlotte Douglas and Dr. McKinlay, assisted by a clinical subcommittee, base their findings on an analysis of 2527 maternal deaths in Scotland since Oct. 1st, 1929, and an inquiry into all births during a six-monthly period, to the number of 39,205. The analysis of the maternal deaths follows the lines of the interim and final reports of the Ministry of Health's Departmental Committee and the results obtained are similar. The proportion of deaths attributed to various causes do not differ except that those for abortion and for eclampsia are somewhat lower, and for the other toxæmias of pregnancy higher, than in England and Wales. Among the "associated deaths,"—i.e., those due to diseases aggravated by pregnancy—the proportion attributed to renal disease was very much higher than in England. The "primary avoidable factor" was evaluated as in the English series and the percentage of "avoidable" deaths was considered to be 58·7, as against 46 in England and Wales and 65·8 in New York.[2] Allowing for personal variations in the arbitrary standards chosen, this confirms the view that about half of the maternal deaths were "avoidable." It is necessary to emphasise, however—and the report is not very clear on this—that it by no means follows that half the mothers would have been saved if this primary departure from the optimum procedure had been avoided. For example, a death from obstructed labour due to contracted pelvis would be classed as avoidable if the patient had had no antenatal care, but it cannot be assumed that such care would in fact have saved her life; she might have died during a Cæsarean section. At the same time the case-histories reproduced leave no doubt that maternal mortality in Scotland could be largely reduced.

Of the 58·7 per cent. of "avoidable" deaths, 21·6 were attributed to the negligence of the patient, and 37·1 to faulty technique of the attendant (including doctor, midwife, and institution). The patient's responsibility usually lay in failure to obtain antenatal care, and in 28 per cent. of fatal cases adequate supervision was lacking—more often than not because of the patient's indifference. In this group the largest subdivision is made up of cases of chronic renal disease, the insidious and painless nature of which does not force the patient to seek medical aid. Some of the women who died had refused therapeutic abortion, and it is noteworthy that in none of these cases did the fœtus survive. The investigators find that the number of antenatal beds available was "grossly inadequate," and although they did not observe that lack of food was a factor in maternal mortality, they bring out the difficulty of providing a special diet under home conditions—a difficulty which made institutional treatment a necessity in a majority of cases of the toxæmias of pregnancy.

Of the women who died at confinement (the "intranatal" class) it is stated that "in the main groups of sepsis, failed forceps, shock, and post-partum hæmorrhage, there is little doubt that in the majority an undue desire to 'hurry' the confinement was at the root of most of the troubles." Where the attendant was not at fault it was the relatives rather than the patient herself who refused to coöperate—a

[1] Report on Maternal Morbidity and Mortality in Scotland. By Charlotte A. Douglas, M.D., and P. L. McKinlay, M.D. 1935. Edinburgh: H.M. Stationery Office.

[2] Maternal Mortality in New York City. By the N.Y. Academy of Medicine, New York: The Commonwealth Fund. London: Oxford University Press. 1933.

statement which will be borne out by every general practitioner who undertakes midwifery. As to the postnatal group two points are made. First, that obvious sepsis was often unacknowledged and the patient kept at home far too long; and secondly, that cases have been traced to children recently discharged from hospitals for infectious diseases and other persons with septic foci.

General comparisons between the group of deaths and the control group of confinements throw a new light on the effect of parity on risks of pregnancy. It appears that while primiparæ have an excess risk amounting to 13 per cent., the fifth and subsequent pregnancies show a mortality greater than the first, and increasing steadily with the number of pregnancies. (It has hitherto been thought that it is not until the eighth pregnancy that the risks are greater than the first.) It is concluded that the effect on the maternal mortality-rate of a falling birth-rate is therefore generally favourable rather than the reverse, although certain causes of death such as eclampsia and accidents of childbirth would be adversely affected by the increase in the relative number of primiparæ. Other conclusions of general interest are that overcrowding has no adverse influence, rather the reverse, and that bad health before pregnancy and a deterioration of health during pregnancy was much more conspicuous among the women who died than among the others.

A consideration of the maternal mortality-rates in Scotland from 1911–30 shows the highest rates to have been in the three border counties and the lowest in equally rural, widely separated areas. Regional comparisons, however, show less variation than in the death-rates from many other diseases. There are gross variations in the rate from year to year, suggesting that comparatively static factors such as the standard of obstetric care are not so important as other considerations, among which might be mete orological conditions or the prevalence of infectious diseases.

The recommendations made by Dr. Douglas and Dr. McKinlay include a general warning against the dangers of undue publicity, and they support a closer linkage between midwives and local authorities "as, for example, by a local authority midwife service." Antenatal, intranatal, and postnatal supervision should be afforded by the same medical attendant wherever possible, and "if, at any stage, a pathological condition is failing to respond to treatment, and if the necessary steps for the patients' safety cannot otherwise be taken, the medical officer of health should be informed at once." Local authorities should consider the institution of a voluntary system of notification of pregnancy, as at Huddersfield, and grants of milk should be made rigidly conditional on adequate antenatal supervision. "It is for consideration whether it is practicable to make the obtaining of adequate antenatal care an essential condition of payment of maternity benefit." As far as the conduct of confinements is concerned it is strongly recommended that, wherever practicable, the advice of a recognised obstetrician should be obtained before any procedures other than minor instrumental or manipulative interference is attempted. Practical instruction in contraceptive methods should be available for women for whom further pregnancies would be dangerous.

Food-poisoning at Nelson

Dr. R. G. Markham, medical officer of health for Nelson, Lancashire, provides us with information about the recent outbreak of food-poisoning in the town. The first intimation of the outbreak was, he says, received on June 28th, and the onset of all the cases seems to have been within the period June 28th to July 1st. So far as can be ascertained about 173 cases occurred, and inquiries showed a common source of infection in cooked meats (pressed beef, stew, stew and cow-heel) which had been made up at one central depôt. The unsold remainder of the suspected carcass of beef was seized and portions sent for bacteriological examination, and after this carcass and the prepared foods had been withdrawn from sale and destroyed the outbreak subsided. The illness began from 12 to 24 hours after consuming the food, the symptoms being acute abdominal pain accompanied by vomiting and diarrhœa.

There were three deaths in Nelson, all on July 4th, and bacteriological examination carried out by the Ministry of Health revealed the presence of *Bacillus aertrycke* in all the organs of those who died. This bacillus was also isolated from specimens of food and beef sent for examination.

Anthrax in a Shaving-brush

The inconspicuous vigilance of the public health service is illustrated by a series of events which came to light at an inquest last week in London on a man named John Banks who died from anthrax on July 6th. A malignant pustule had developed on his cheek on July 3rd, and his shaving-brush was found to contain anthrax spores and bacilli. According to the widow, the brush had been bought at least two years previously and it proved somewhat similar to—though not definitely identifiable as—a brush missing from a consignment of twelve seized in June, 1932, all of which were found to contain anthrax spores. The fact that this consignment was infected was ascertained when a man died from anthrax contracted from a brush bought in Stepney, and it was then discovered that some from the same batch had been sold to two shops in Lambeth. It proved possible to collect all of these except one, which had been bought the day before by a chance customer who could not be traced. The shop from which it was sold is in the same street as Banks's home and only two or three minutes' walk distant. In 1932, when the missing brush could not be found, the hospitals in the district were warned to be on the outlook for a malignant pustule in order that no time should be lost before serum was given, but as no case occurred, it was believed that the customer was not a Lambeth resident.

Dr. A. G. G. Thompson, medical officer of health for Lambeth, to whom we are indebted for these particulars, informs us that considerable difficulty was experienced in tracing the source of supply to the wholesale dealer in Stepney in 1932, but as the result of careful inquiry it transpired that a shopkeeper now in Lambeth bought the brushes shortly after the war. They were overlooked at the back of a drawer, and when his business in Stepney was given up in 1930 they were sold with the rest of the stock. The original owner stated that he had intended to destroy them but forgot to do so. The country of origin had also been forgotten, but from various indications there seemed little reason to doubt that they were of German or Czecho-Slovakian origin.

A possible fault in the chain of evidence is that John Banks shaved with the brush at least once after the pustle was noticed, and it is arguable that the brush was infected from the pustule and was therefore not the primary cause. Banks was a small cobbler, and had purchased some leather on July 2nd. As the leather was tanned and dressed ready for soling, it did not seem to be a likely source of infection, but

samples nevertheless were taken for examination with the expected negative result. Banks almost always shaved himself, and the last time he had been shaved by a barber was at least a fortnight before the onset of his illness; after inquiry no suspicion was attached to the barber's utensils. Hence the shaving brush appears to have been the source of the disease; but its prolonged use without giving rise to infection is amazing.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED JULY 6TH, 1935

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 1485; diphtheria, 826; enteric fever, 49; acute pneumonia (primary or influenzal), 448; puerperal fever, 43; puerperal pyrexia, 107; cerebro-spinal fever, 16; acute poliomyelitis, 9; acute polio-encephalitis, 1; encephalitis lethargica, 4; dysentery, 11; and ophthalmia neonatorum, 95. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on July 9th was 2685, which included: Scarlet fever, 768; diphtheria, 984; measles, 40; whooping-cough, 386; puerperal fever, 25 mothers (plus 8 babies); encephalitis lethargica, 271; poliomyelitis, 1. At St. Margaret's Hospital there were 25 babies (plus 14 mothers) with ophthalmia neonatorum.

Deaths.—In 121 great towns, including London, there were no deaths from small-pox or enteric fever, 12 (0) from measles, 1 (1) from scarlet fever, 18 (3) from whooping-cough, 19 (0) from diphtheria, 36 (7) from diarrhœa and enteritis under two years, and 13 (0) from influenza. The figures in parentheses are those for London itself.

Of the fatal cases of measles 5 were in Liverpool and 3 in Sunderland. Liverpool also reported 3 deaths from diarrhœa and enteritis, and there were 3 others in Hull and 2 each in Manchester, Sheffield, Birmingham, and Stoke-on-Trent. Three of the deaths attributed to influenza were in Manchester and 2 in Huddersfield.

The number of stillbirths notified during the week was 265 (corresponding to a rate of 37 per 1000 total births), including 37 in London.

PANEL AND CONTRACT PRACTICE

A Health Insurance Scheme for British Columbia

IT seems likely that British Columbia will be the first of the overseas dominions to adopt compulsory health insurance. The question was considered some years ago by a Royal Commission, who in 1932 reported that they were satisfied that the people of British Columbia were "overwhelmingly in favour of a compulsory health insurance and maternity benefit scheme," and recommended that such a scheme should be established at an early date. The government of the province have since given the subject the most careful study from all points of view, and have now produced a draft Bill, which is intended to serve as a basis of discussion by all interested parties with a view to formulating a definite measure for adoption in the next session of the legislature. The Bill, which is accompanied by an explanatory memorandum, is evidently the result of some hard thinking, and it presents points that merit the attention of all who are interested in the progress of health insurance.

The explanatory memorandum emphasises the need for health insurance. It is believed that the conditions in the province do not differ materially from those prevailing in the United States as found by the extensive researches of the Committee on the Costs of Medical Care, which showed that while 1385 days of hospital care per year were required for every 1000 persons, only 746 days were actually given; that 5650 medical attendances were required as against 2391 given; and that although all the 1000 persons required dental care during the year only 241 received it. The position of the persons and agencies providing medical care is also unsatisfactory. In 1933 nearly one-half of the doctors engaged in private practice in British Columbia and 69 per cent. of the dentists had net incomes of less than $2000 (£400). And it is stated that "hospital boards throughout the province are at present at their wits' end as to how they can finance their institutions."

To remedy this state of things the Government propose to set up a health insurance system to be administered by a central commission, which will consist of five government officials, including two doctors—the provincial health officer, and the director of medical services. There will be two chief executive officers, both of whom will be members of the commission: the administrator of health insurance, who will be responsible for the business administration and enforcement of the law, and the director of medical services, who must be a qualified medical practitioner and who will organise, direct, and control the provision of the medical benefits granted under the scheme. Both officers will be appointed by the Lieutenant-Governor, but the appointment of the director of medical services must be with the approval of the College of Physicians and Surgeons of British Columbia. The commission will be advised by an advisory council representing the various interests concerned, and there will be a medical committee, nominated by the College of Physicians and Surgeons of British Columbia, charged with important functions in relation to the discipline of the medical service, and similar committees representing dentists, pharmacists, nurses, and hospitals.

Under the scheme insurance may be applied to such classes of employees earning $200 per month or less, and their dependents, as may from time to time be determined by the commission. Persons working on their own account and earning not more than $200 per month may insure as voluntary contributors, and the medical benefits of the scheme may be extended to destitute persons and their dependents. The employee will pay a contribution not exceeding three per cent. of his wages, and the employer will contribute an amount equal to two-thirds of that paid by the employee. The Government will make contributions sufficient to cover the cost of medical benefits provided for the destitute and half the cost of administering the scheme. The insured persons, including the destitute, will be entitled to an extensive range of medical benefits, comprising general practitioner, maternity, specialist, dental, nursing, laboratory, and pharmaceutical services, hospital care, and such preventive services as may be decided upon by the commission. For insured persons other than the destitute there will be a cash benefit payable during incapacity for work, beginning after the first week of incapacity and continuing for a maximum period of 26 weeks.

Payment will be at the rate of one-half the wages ordinarily earned.

The Bill provides that all qualified doctors, dentists, nurses, and pharmacists shall have the right to give professional services under the scheme if they wish to do so, and the insured persons will be free to choose any doctor, dentist, nurse, and pharmacist on the list of those who have undertaken to serve. These rights may, however, be modified in sparsely populated districts in order to guarantee a satisfactory service. It is estimated that the annual cost of the medical benefits will be $12·50 (50*s.*) per head, of which $3·40 will be set aside for the remuneration of the general medical practitioners, who may be paid either on a capitation or an attendance basis. But for the treatment of the destitute, who now form about one-fifth of the persons who would be eligible for insurance, payment will be at half rates, which the explanatory memorandum states "will not be unfair to the persons and organisations providing medical service, for at present they are doing a great deal of totally unpaid work for the indigents, and there is every reason to believe that, for most medical services, this arrangement can be made."

The inclusion of the destitute among the persons for whom treatment is provided under health insurance arrangements is a feature of the British Columbia scheme that is of special interest, for it carries into effect the policy advocated by the British Medical Association for adoption in this country, although it has not been suggested here that doctors should be paid at lower rates for the treatment of the destitute. Another interesting feature of the scheme is that it will be administered direct by a central commission without the interposition of approved societies or insurance committees. It is thought that this will effect such economies that the cost of administration will not exceed 10 per cent. or possibly 8 per cent. of the cost of the benefits. The draft Bill confers upon the commission wide powers to modify the scheme in various important respects, such elasticity being considered essential to the successful working of an extensive and elaborate system of medical services in a country where the geographical and social conditions vary so widely as in British Columbia. The commission may, for instance, by regulations require insured persons, other than the indigent, to pay as much as one-quarter of the cost of the drugs and appliances prescribed for them. A similar requirement has been adopted in several European countries to check the extravagant use of medicaments. There are other noteworthy points in the scheme, and those responsible for preparing it may be congratulated on their courageous and competent handling of a highly difficult subject.

Some Statistics

An examination of the quarterly statistical statement issued by the London committee is worth while if only to bring to mind the magnitude of the task of providing medical benefit for the insured population. Of the 1,888,956 insured persons in London on March 31st 1,760,219 were included in doctors' lists, 15,739 of them being the resident insured staffs of hospitals and similar institutions: 140 persons were required to make their own arrangements for the receipt of medical benefit, and 896 were allowed to do so; the former are exempt persons whose total income exceeds £250 a year (they pay no contributions but their employers do) while most of the latter are the employees of a hospital, the remainder being in the main persons who desire to obtain homœopathic treatment and others who for various reasons are allowed to obtain treatment from non-insurance doctors. There were 2060 general practitioners and 126 medical officers of institutions on the medical list, who during the quarter notified 65,308 acceptances but suffered 68,105 removals from their lists. The number of medical cards issued was 122,986. Forms of medical record recovered from practitioners numbered 66,472. 7013 insured persons applied for authority to change their local doctors but nearly 2000 of them changed their mind, for only 5061 eventually transferred, this number representing 0·287 per cent. of those whose names were included in doctors' lists. For the twelve months ended March, 1935, 17,812 so transferred, representing a comparable percentage for the year of 1·01.

The pharmaceutical service for the county is provided by 986 chemists in general business, 54 in institutions, and 12 other persons, a total of 1052 contractors who are responsible for 1299 shops within the county and 340 shops elsewhere where London prescriptions may be dispensed. The number of such prescriptions dispensed during the quarter was 2,388,506, costing £77,484 17*s.* 6*d.*, the average total cost per prescription being 7·79*d.*, while the average cost of the 1·35 prescriptions issued per insured person was 10·55*d.*

Insurance doctors still issue prescriptions for appliances which are not "prescribed appliances," and during 1934 a total of 547 such prescriptions had to be disallowed, to the dismay of the doctors who had to be surcharged with their value. The favourite articles in this connexion are eye shades (one-fifth of the total); others in order of popularity are finger- or thumb-stalls, capsicum wool, corn pads or adhesive felt, syringes, glass tubes and rods, down to safety-pins and tweezers. It should be borne in mind that while there is nothing to prevent a doctor from prescribing any drug, however costly, which is reasonably necessary for the adequate treatment of his patients, appliances may be ordered only if they are included in the list of "prescribed appliances" which will be found in the Second Schedule to the Regulations or in the National Formulary.

Housing Schemes and Surgeries

The housing committee of the Leeds Corporation recently asked the local panel committee to assist them in allocating special houses which are being erected for a limited number of doctors on the new housing estates. It was realised that doctors whose practices covered slum clearance areas were suffering hardship but the intention of the corporation to give a monopoly of surgery accommodation to certain doctors, and the consequent restriction of free choice of doctor to insured persons, gave rise to natural objections. Leeds appears to have been clearing slums somewhat drastically, so much so that in one case four-fifths of a practitioner's patients were affected. In one of the new colonies it was estimated that there would be about 3000 houses and some 15,000 people involved; four houses were being specially erected for doctors and dentists and the panel committee were asked to recommend the proper practitioners to whom the accommodation might be offered—a sensible request by the corporation but an embarrassing task for the panel committee. The position is complicated by the fact that doctors who have already taken surgery accommodation on the new estates have done so under the explicit statement of the corporation that the conditions

were only temporary and subject to the tenancies being at the decision of the housing committee; clearly this arrangement must be altered in the direction of granting leases for a reasonably long period so as to attract the right type of practitioner. Meanwhile the result of the panel committee's deliberations will be awaited with interest.

A Final Certificate and the Consequences

The London medical service subcommittee has recently dealt with a curious complaint against a doctor. The insured person has been incapacitated almost continuously since 1931, suffering from pulmonary fibrosis and neurasthenia and receiving monthly certificates, but he has been able to work for about a fortnight at Christmas time each year as a temporary post-office sorter. In 1934 he worked from Dec. 14th to 26th and on Dec. 15th he induced the doctor to "sign him off" although the doctor demurred and eventually told him that if a final certificate were issued he would decline to certify him again as incapable of work. The insured person however applied for a certificate on Dec. 29th alleging that since the termination of his temporary work he had again become ill. The doctor declined, whereupon the man obtained treatment and certificates from another doctor, and on Jan. 18th a regional medical officer examined him and found him incapable of work; so on Jan. 21st and 24th he again consulted his doctor who prescribed for him but again declined to issue a certificate. Later he gave written consent to the insured person's transfer to the other doctor's list. The subcommittee stated that it was clear that the whole of the difficulty had arisen out of the insistence on the part of the insured person that he should be provided with a final certificate. There was no evidence to suggest that his condition between Dec. 14th and 26th, when he was doing his annual temporary work, was different in any essential respect from that obtaining during the remainder of the year. There was very little doubt that the sole reason for the insured person's application for a final certificate in this case was in order that he might benefit financially as a result of the wages he would receive as a temporary sorter being in excess of the amount which he would have received by way of disablement benefit. But the doctor had been at fault in issuing a final certificate after the man had gone to work and had committed an error of judgment in saying that he would not issue another certificate. A warning as to the necessity for a strict compliance with the medical certification rules was issued to him. With regard to an allegation that the doctor failed to examine the patient on Dec. 29th the subcommittee were of opinion that, being well aware of the history of the case, and having issued a final certificate on Dec. 15th the doctor was not satisfied on Dec. 29th that any material change in the man's condition would be demonstrated by a detailed examination. It appeared to the subcommittee that the insured person had proved by his own action in accepting work that he was capable of work, and, in these circumstances, they did not think he had any cause for complaint that the doctor refused, on being satisfied that there was no change in his condition, to issue a further certificate of incapacity. The committee adopted the recommendation that the complaint had not been substantiated, but that the doctor had been at fault in issuing a final certificate after the insured person had resumed work. The insured person accordingly has to pay the other doctor's bill, and the doctor who had the trouble of defending his actions will probably insist in future that certificates shall express his own opinion, and not necessarily the desire of his patients, however insistent these may be.

OBITUARY

ALFRED HENRY SPURRIER, L.R.C.P. Lond., C.M.G., O.B.E.

THE death is reported from Zanzibar on July 5th of Alfred Henry Spurrier, whose name is so closely connected with the government and medical administration of Zanzibar. He was born in Colyford, Devon, in 1862, and educated at Guildford Grammar School and the London Hospital Medical School, whence he took the diploma of L.R.C.P. London in 1887. He was for a period at the Gregorian University in Rome, but his long career in the east commenced with his appointment as medical officer to the Eastern Telegraph Company's cable ships in which capacity he assisted in the special deep-sea survey off the mouth of the Congo in the cable ship *John Pender*. He was appointed medical officer at the Company's station in Zanzibar, was present at the bombardment of Zanzibar in 1896 and was decorated by the Sultan for his services. In the following year he conveyed into German territory a usurper and his family, and conducted a tour with the Sultan through South Africa. He became physician in extraordinary to the Sultan who bestowed upon him various decorations, while he acted also as medical superintendent of "Prison Island" sanitary station and as editor of the *Zanzibar Gazette*. Dr. Spurrier was appointed O.B.E. in 1918.

HORACE MANDERS, M.D. Brux., F.R.C.S. Eng.

THE death occurred on July 5th at Chesham Bois of Lieut.-Colonel Horace Manders in his eighty-third year. He was born in Canterbury, the son of Major Thomas Manders, and educated at Marlborough, whence he went for his medical education to St. Mary's Hospital, London. There he was house surgeon and afterwards house surgeon at Canterbury Hospital. He studied for a time at the Beaujon Hospital, Paris, became interested in electrotherapeutics, and held an appointment for a time in this subject at the East London Hospital for Children. He was at one time medical officer at the hospital at Dvinsk, Latvia, while during the Boer War he saw considerable service in South Africa and was made an honorary captain in the army, and held the rank of lieut.-colonel in the 4th Battn. of the Royal Berkshire Regiment. Colonel Manders married Louisa, daughter of the late Mr. H. P. Goode of Haverfordwest and Colonel Horace Craigie Manders, A.D.C. to the Viceroy of India, is his son.

DAVID SAMUEL, M.R.C.S. Eng., L.R.C.P. Lond., J.P.

THE death occurred recently at Skewen of Dr. David Samuel, who was well known both for medical and public services in South Wales. He was born at Llanelly in 1868, was educated at the Athenæum school, a school in Llanelly at that time, and went to St. Mary's Hospital, London, for his medical education. He qualified with the English double diploma in 1869, and after practising for a short time at Port Talbot settled down at Skewen, where for the rest of his professional life he carried on successful general medical practice, giving special attention to ophthalmic work. He had a keen

clinical instinct, was devoted to his work, and had the faculty of becoming the friend as well as the doctor to many of his patients. He was medical adviser to several local industrial concerns, including the National Oil Refineries and the British Tanker Company, while he also interested himself in the work of the St. John Ambulance Brigade and established the first Red Cross Brigade in the Neath division, which gave conspicuously good service during the war. He was J.P. for the county of Glamorganshire.

Dr. Samuel married Edith, second daughter of the late Richard Richards, of Aberavon, who survives him.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

IN the House of Lords on July 10th the Housing (Scotland) Bill was read a second time.

In the House of Commons on July 10th, the St. Bartholomew's Hospital Bill was read a second time.

The West Riding of Yorkshire Mental Hospitals Board (Superannuation) Bill was read the third time.

In the House of Commons on July 12th the University of Durham Bill passed through Committee without amendment and was read the third time. The money resolution in connexion with the Bill was also agreed to.

The Diseases of Animals Bill was considered on report and read the third time.

Balconies to Working-class Flats

In the House of Lords on July 15th the Housing Bill was considered on report.

The Earl of DUDLEY moved an amendment to clause 31 (Exchequer contributions towards provision of flats on sites of high value) to ensure that the approval of the Minister of Health should not be given to flats for the working-classes unless he was satisfied that each flat in a block exceeding three stories in height was provided with a balcony. He said that medical evidence showed that in the case of families living in the top stories of flats, infant children suffered considerably because their mothers were unable to take them out into the air and sunshine Architectural and technical research showed that the cost of erecting balconies on the high flats would come to very little. Since this matter was raised on the Committee stage of the Bill he had consulted the Minister of Health, with his medical and architectural experts. He understood that the Minister recognised the desirability of such balconies but that there were certain difficulties in the way of making this provision statutory. The Minister, however, was willing to give an assurance that he would emphasise the desirability of the provision of these balconies in a circular to the local authorities. Recognising the genuine sympathy of the Minister he (Lord Dudley) thought that that would meet the case he had in mind

Viscount HALIFAX, Secretary of State for War, said he could give the assurance which Lord Dudley desired. The Minister of Health would see to it that this matter was mentioned in the Circular which it was proposed to send to local authorities.

The amendment was withdrawn and the Bill passed through the report stage.

Health Services in Aden Protectorate

In the House of Lords on July 15th the Earl of PLYMOUTH, replying to a question by Lord LAMINGTON on the affairs in the Arden Protectorate, said that the system which already existed of training certain natives in the protectorate in elementary hygiene and health service was being extended. This training had resulted in the setting up of what might be termed native dispensaries which were necessarily of a somewhat elementary nature, but which were able to do valuable work. These dispensaries were supervised by the political officers.

Health Insurance Bill: Maternity Benefit Concession

In the House of Commons on Monday, July 15th, the National Health Insurance and Contributory Pensions Bill, as amended in Committee, was considered on Report.

On clause 1 (Amendment of Section 3 of Insurance Act with respect to free insurance period and extended insurance period),

Sir KINGSLEY WOOD, Minister of Health, moved an amendment to provide maternity benefit to insured persons during their extended insurance period. He said that a general desire was expressed in the Committee stage for this concession. The House would appreciate his desire not to place a further charge on the funds of the approved societies who had already so willingly undertaken to bear their share of the considerable cost of the benefits made available under the Bill. Moreover, it was difficult to forecast with any precise accuracy the cost of this proposal, as it depended on so many uncertain factors, including the number of persons who would pass into the extended insurance period and the birth-rate prevailing among such persons. A close investigation had been made into the finance of the health insurance scheme with all these matters in mind, and particularly modifications had been introduced into the Bill in connexion with the setting up of the Unemployment Arrears Fund. As a result they had found a source from which the additional cost could be met—namely, the balance of the unclaimed stamps money, which was not under the Act required to be paid to the Central Fund. Therefore he (Sir Kingsley Wood) was able to meet the wishes of the House and at the same time not cast any further burden on the funds of the approved societies. He was very glad to be able to secure to insured persons in the extended period not only medical benefit and additional treatment benefits, but maternity benefit as well. (Cheers.)

The amendment was agreed to and four consequential amendments were made.

On the motion for the third reading of the Bill,

Sir KINGSLEY WOOD said it was satisfactory to know that those who had elected as voluntary contributors to continue their insurance would not suffer any disadvantage from having taken that course. They would be able, on complying with the usual conditions, to obtain the benefits now given to unemployed persons in connexion with the continuation of insurance. He was also glad that a number of amendments had been made in this Bill which would facilitate the task of the consolidation of the Statutes respecting National Health Insurance. The Bill certainly secured to an insured person who had occasional periods of unemployment not exceeding 21 months in duration should not suffer any reduction whatever in benefits to which he or she might be entitled. His arrears would be completely excused and the benefit periods for a person would be treated in just the same way as if he had been in continuous employment. This would be a real and welcome benefit affecting some 5,000,000 insured persons. The Bill went further and provided for the still more unfortunate person who suffered from prolonged unemployment. Any person who had been insured for 10 years before becoming unemployed would be entitled to medical and maternity benefits and his old age and widows' and orphans' pension would be maintained unimpaired as long as his unemployment continued. It was all the more satisfactory that in making these changes the financial stability of national insurance would not be in any way jeopardised, and as far as approved societies were concerned, not only would they be of great value to those members

who unhappily suffered from unemployment, but would result in a great simplification of the working of National Health Insurance.

The Bill was read the third time and passed.

HOUSE OF COMMONS

WEDNESDAY, JULY 10TH

Meals for Necessitous Children

Mr. CLEARY asked the Minister of Labour the approximate amount saved, firstly in Liverpool and secondly in the country, by the action of the Unemployment Assistance Board in making deductions in respect of meals granted to necessitous children.—Lieut.-Colonel MUIRHEAD, Parliamentary Secretary to the Ministry of Labour, replied: The Board inform me that no information is available as to the aggregate effect of taking into account free meals provided at school to children in applicant's households. As the hon. Member was informed on July 3rd, there are several classes of cases in which the Board ignore such meals. In the remaining cases in which meals are taken into account to a moderate extent, no consideration of saving to the Exchequer arises.

Mr. CLEARY: Is the hon. gentleman prepared to make an inquiry into this subject in view of the fact that the policy of the Unemployment Assistance Board is militating against the policy of the Board of Education which encourages the granting of meals in industrial areas particularly?

Lieut.-Colonel MUIRHEAD: I will certainly consider it.

THURSDAY, JULY 11TH

Hospitals and the Lotteries Act

Lieut.-Colonel ACLAND TROYTE asked the Home Secretary whether he could give any estimate of the amount of money which would be lost annually to hospitals as a result of the Betting and Lotteries Act; and whether he proposed to bring in a Bill to amend this Act so as to allow small lotteries to be held for the benefit of hospitals and other recognised institutions.—Sir JOHN SIMON replied: I have no information which would enable me to reply to the first part of the question. As regards the second part, the House considered, during the passage of the Betting and Lotteries Act, 1934, various proposals for legalising lotteries in aid of hospitals and other charities but rejected them.

Lieut.-Colonel ACLAND TROYTE: Is the right hon. gentleman aware that my local hospital has lost £700 or £800 a year owing to this Act, and that it is going very much further than it appeared the House intended to go; and will the right hon. gentleman make further inquiries?

Sir JOHN SIMON: My hon. friend will realise that very careful examination was given to this question by the House. I must point out to him that as far as I know the Act of 1934 did not make illegal any type of lottery which was previously legal.

Lieut.-Colonel ACLAND TROYTE: Does the right. hon. gentleman realise the extent to which it is being applied?

Viscountess ASTOR: Is it not the case that it has been stated that these lotteries do more harm than good to the hospitals in the year?

Sir JOHN SIMON: It certainly must be borne in mind that assuming that efforts were made to finance hospitals in this country by means of lotteries, it does not necessarily follow that the existing sources out of which the hospitals receive help would continue to flow.

Sir WILFRID SUGDEN: In view of the confused state of the betting law, will the right hon. gentlemen consider the possibility of its codification?

Mr. PALING: Since the passing of the Act has there been any evidence of any great demand for the restoration of these lotteries?

Sir JOHN SIMON indicated dissent.

Free Milk for Necessitous Children

Sir WILLIAM JENKINS asked the President of the Board of Education if he would give reasonable discretion to local education authorities to grant free meals or free milk to any child where it was within the definite knowledge of the authority that the economic conditions in the child's home were exceptional.

Mr. THORNE asked the President of the Board of Education the attitude of the Board to those local education authorities who were giving free meals or milk merely on the ground of poverty, where the family income was below a certain minimum.—Mr. OLIVER STANLEY replied: The attitude of the Board in the matter has been set out in a letter dated Nov. 14th, 1935, to the Secretary to the Association of Education Committees. In general, I should agree that the economic conditions of the homes are a factor to which full weight should be given in considering how much importance should be attached to any physical signs or educational symptoms which may be noted by the medical officer or the teacher.

Viscountess ASTOR: Is it not a fact that over 30 per cent. of the children attending elementary schools are either physically defective or in need of medical observation? In view of that fact, will not my right hon. friend do all he can to bring in a policy to deal with free milk in schools?—Mr. STANLEY: If the noble lady really wants to know what the figures are perhaps she will put a question down. If she is only giving me information, I am obliged to her.

Maternity and Child Welfare

Mr. GEORGE GRIFFITHS asked the Minister of Health the names of the maternity and child welfare authorities which made provision for home helps, and whether his sanction had been given or refused to any authority which had proposed to institute this service within the last two years.—Sir KINGSLEY WOOD replied: There are 133 maternity and child welfare authorities, who according to my latest information have made provision for this service. I will send the hon. Member a list of these authorities, showing those to which sanction has been given within the last two years. There is no case within that period in which sanction has been refused to a proposal to institute this service.

Milk and the Germicide Process

Mr. RICKARDS asked the Minister of Health whether the new process of adding germicide to milk for destroying bacteria had been brought to his notice; whether he would have the process tested and investigated; and consider whether any modification of the Food and Drugs Adulteration Act would be required to permit of milk so treated being sold on a commercial scale.—Sir KINGSLEY WOOD replied: I have recently been informed of a claim to the discovery of a new germicide for milk but I have no knowledge of its composition and no sample has been supplied to my Department. The addition of any germicide to milk would be contrary to the provisions of the Preservatives Regulations and the Food and Drugs (Adulteration) Act, and for the reasons set out in the report of the Departmental Committee on Preservatives in Food I could not contemplate any amendment of the law in this respect.

Brigadier CLIFTON BROWN: In view of the report of the Milk Reorganisation Commission that the Food and Drugs Act should be amended in various particulars, will not my right hon. friend include this matter with other recommendations when this Act is reviewed?

No further answer was given.

Committee on Nutrition: Welsh Medical Representative

Sir WILLIAM JENKINS asked the Minister of Health whether he would appoint some medical expert from South Wales or Monmouthshire who had had experience of the depressed areas on the advisory committee who were now considering the question of national nutrition.—Sir KINGSLEY WOOD replied: I have decided, in consultation with my right hon. friend the Secretary of State for Scotland, to appoint the Senior Medical Officer of the Welsh Board of Health to be a member of this Committee.

Beddington Sewage Scheme

Mr. DORAN asked the Minister of Health if he was now in a position to give a statement regarding the progress of the Beddington sewage scheme, Croydon; and if he could assure people resident in the Mitcham, Thornton Heath, and West Croydon districts that all necessary precautions had been taken taken by his department,

in conjunction with the Croydon corporation, against a repetition of the insanitary conditions which were experienced in these areas in 1934.—Sir KINGSLEY WOOD replied: I am informed that a scheme for dealing with the whole of the sludge will be placed before the Council at their meeting this month. Any scheme put forward will be fully investigated by the Ministry before sanction is given. Interim measures have been taken to prevent nuisance.

Maternal and Infantile Mortality at Hebburn-on-Tyne

Mr. PEARSON asked the Minister of Health if he had considered the annual report of the Medical Officer of Health for Hebburn-on-Tyne, in which it was stated that the infantile mortality-rate had risen from 86 per 1000 live births last year to 108 this year, and that for every 116 babies born last year a mother died, the average being almost double that for the whole country; and, in view of the seriousness of the problem, will he hold an inquiry into the reasons for this high rate of maternal and infantile mortality.—Sir KINGSLEY WOOD replied: I have received this report and have arranged for one of the medical officers of the Department to visit the district and inquire into the relevant circumstances.

Coloured Population and Public Health in Cardiff

Captain ARTHUR EVANS asked the Minister of Health, if he would consider the Report of the survey of the conditions of the coloured and half-caste population domiciled in the city of Cardiff, conducted by a joint committee of the British Social Hygiene Council and the British Council of the Mercantile Marine, which had been sent to him; and if, in view of the health, employment, and social conditions found to be prevailing, he would take suitable action to remedy the matter.—Sir KINGSLEY WOOD replied: I do not find that I have yet received a copy of the Report to which my hon. friend refers, but if he will arrange for me to be supplied with one, I will gladly consider it, in so far as it refers to matters within the province of my Department.

Captain EVANS: When considering the report in question will my right hon. friend bear in mind the desirability of appointing a small Royal Commission, say of three persons, with wide terms of reference, to investigate all aspects of the difficult and complex problem of coloured people domiciled in Great Britain, especially in dock areas?

Sir KINGSLEY WOOD: That is a very wide question and probably outside my province, but I had better see the report first.

Lunacy and Mental Deficiency

Mr GUY asked the Minister of Health whether he would consider amending the lunacy laws with the object of providing differential treatment for mental deficiency.—Sir KINGSLEY WOOD replied: In England and Wales the Mental Deficiency Acts, 1913 to 1927, make express provision for the ascertainment and treatment of mental defectives, as distinct from persons dealt with under the Lunacy and Mental Treatment Acts, 1890 to 1930. I am not aware of circumstances necessitating action such as my hon. friend suggests.

Backwardness of African Natives

Sir E. GRAHAM-LITTLE asked the Secretary of State for the Colonies whether his Department was now in a position to recommend a grant for a scientific investigation into the causes of physical and mental backwardness in the natives of Kenya Colony, an investigation demanded on repeated occasions by scientific bodies in Kenya and in this country and supported by his excellency the Governor of Kenya Colony.—Mr. M. MACDONALD, Secretary, replied: No, Sir, there are no funds at the disposal of my Department from which any grant for such purpose could be made. The importance of inquiry into the mental and physical development of African natives is recognised. But before deciding what steps should be taken I propose to await the issue of the general investigation which is to be conducted by the African Research Survey, under Sir Malcolm Hailey. I understand that this survey will take the form of a review of African problems, generally and that it will indicate the extent of existing knowledge concerning those problems and the steps to be taken to supply any deficiencies in that knowledge. The inquiry to which the hon. Member refers is only one part of the general survey, and the necessity for any special investigation of it must be considered in the light of its relation to other factors. It is in regard to the inter-relation of African problems and relevant factors that the general investigation will, it is hoped, be of special value in determining the course of future research.

Advertisements of Patent Medicines

Mr. HALL-CAINE asked the Minister of Health whether arising out of the recent deputation received by him on the subject he proposed to introduce legislation controlling the advertising in this country of patent medicines.—Mr. SHAKESPEARE, Parliamentary Secretary to the Ministry of Health, replied: My right hon. friend is not at present in a position to make any statement on this subject.

Atmospheric Pollution

Mr. THOMAS WILLIAMS asked the Minister of Health whether, in order to secure a cleaner atmosphere and the consequent improvement in the public health, he would recommend to the notice of other local authorities the action of the city of Manchester, which was now carrying out tests of smokeless fuels in its town hall over a period of 12 months; and what had been the Ministry's own experience of smokeless fuel.—Mr. SHAKESPEARE replied: The tests at Manchester have been only recently commenced. The results of the tests will no doubt in due course be available for other authorities. My right hon. friend is informed by the First Commissioner of Works that smokeless fuel has been found satisfactory for use in open grates, but the cost is at the present time greater than that of ordinary house coal, after allowing for relative efficiency.

Injured Workmen and Supply of Surgical Appliances, &c.

Mr. TINKER asked the Home Secretary if his attention had been drawn to the large number of cases of injured workmen who had to get surgical appliances, artificial legs, arms, &c., to assist them to follow their employment; that there was nothing in the Workmen's Compensation Act to cover the cost; and if he will consider amending it so that all such cases shall be met by payment of the cost incurred.—Captain WALLACE, Under-Secretary Home Office, replied: No recent representations to my Department on this subject can be traced, but if the honourable Member will send me particulars of any cases of workmen being unable to obtain necessary appliances without hardship owing to having to defray the cost, I will look into the matter and consult, if necessary, my right hon. friend, the Minister of Health.

Small-pox and Compulsory Vaccination

Mr. GROVES asked the Minister of Health when vaccination against small-pox became obligatory in this country, and what was the effect.—Sir KINGSLEY WOOD replied: vaccination against small-pox for new-born children first became obligatory in this country in 1853. While it is not easy precisely to assign particular effects to this measure, its immediate practical effect may perhaps be gauged from the fact that whereas in the six years 1847 to 1852 the average annual mortality from small-pox per million living persons was 326, the average figure for the six years 1854 to 1859 was 187.

Herbalists

Sir ERNEST GRAHAM-LITTLE asked the Home Secretary whether he was aware that the Statute 34 and 35 Henry VIII., c.8, making provision whereby persons having a certain knowledge of herbs and roots could be privileged to engage in some branches of medical practice was still in force, and that a body calling itself the College of Botanic Therapy claimed under that charter to be privileged to issue diplomas conferring legal status differing from the status of herbalists who had no such diploma; and what steps he proposed to take in the matter.—Sir KINGSLEY WOOD, Minister of Health, replied: I am aware of the statutory provision referred to. I was not previously

aware of the claim said to be made by the College of Botanic Therapy and I do not know on what it is based, but I do not feel called on to take any steps in the matter.

TUESDAY, JULY 16TH

Medical Inspection in Scottish Prisons

Mr. LEONARD asked the Secretary of State for Scotland if he had instructed governors and medical officers of Scottish prisons jointly to inspect every part of the prison establishment and to record the result of this inspection in their respective journals; and, if so, would he given the dates of such inspections in the last 12 months in Barlinnie prison recorded in the journals referred to.—Sir GODFREY COLLINS replied: The Prisons (Scotland) Rules provide that the governor and medical officer of each prison shall jointly inspect every part of the prison establishment in the last month of every quarter and that the results of these inspections shall be recorded by the medical officer in his journal. Owing to the length of time necessary to make a thorough inspection of the whole establishment at Barlinnie Prison, it has not always been practicable for the governor and medical officer to make joint inspections, and steps are being taken in the course of the comprehensive revision of the Prison Rules, which is now in progress, to amend the rules dealing with this matter. The dates of the inspections carried out at Barlinnie Prison in the last 12 months were as follows, viz., governor's inspections, Oct. 1st, 1934, Dec. 24th, 1934, March 29th, 1935, and June 18th, 1935. Medical officer's inspections, recorded in the medical officer's journal: Sept. 28th, 1934, Dec. 21st, 1934, March 29th, 1935, and June 21st, 1935.

Mr. LEONARD asked the Secretary of State for Scotland if he was aware that prisoners in Barlinnie prison, ordered to their cell beds as sick, were forced to parade at the prison surgery the following morning along with the prisoners reporting sick; that influenza patients had had to conform to this practice; and would he take steps to ensure that prisoners ordered to bed as sick would be visited in their cells by the medical officer before being called to parade with the ordinary sick.—Sir GODFREY COLLINS replied: Prisoners in Barlinnie who have been ordered to bed because of ailment are not paraded at the surgery on the following morning except when the ailment is a minor one. If the prisoner complains of feeling unwell he is kept in bed until examined by the medical officer. Where influenza has been diagnosed the prisoner is not paraded at the surgery, but is either admitted to the prison hospital or kept in bed in his cell until the medical officer certifies him as fit to get up. The practice does not seem to call for any alteration.

MEDICAL NEWS

University of Cambridge

On June 25th the following degrees were conferred:—

M.D.—G. G. Penman, G. F. Abercrombie, *E. A. Trim, and A. C. Crooke.

M.B., B.Chir.—John Cann, J. H. Shakespeare, John Collinson, Norton Stevens, and E. C. Sugden.

M.B.—R. D. Roper, N. G. Hulbert, P. H. L. Playfair, Benjamin Holden, and G. O. A. Briggs.

B.Chir.—J. F. Dow, R. E. Rodgers, H. S. Wigfield, *Wilfrid Warren, D. A. Smith, and R. T. Gabb.

*By proxy.

University of London

At recent examinations the following candidates were successful:—

D.P.H.

V. F. Anderson, J. H. Blakelock, Hilda L. Byett, Alan Carling, H. S. Davies, David Erskine, W. G. Evans, Mohomed Farooq, O. M. Francis, H. A. Gilkes, J. V. Hurford, Muriel V. Joscelyne, J. T. R. Lewis, Edyth L. Morris, Vaithianather Nadarajah, N. C. Parfit, L. M. Ram, C. J. Sanderson, Hubert Smith, Thomas Standring, E. W. Taylor, V. T. Vagh, J. D. V. Wijeyaratne, W. W. Wildman, R. A. Wilson, and E. D. B. Wolfe.

William Julius Mickle Fellowship.—This fellowship is awarded to the graduate of the university who has done most to advance medical art or science during the last five years. Application should be made to the principal of the university not later than Oct. 1st.

Rogers Prize.—This essay prize will be offered for award in 1936 and is open to all registered medical practitioners. The subject which has been chosen is the natural history of peptic ulcers and essays should reach the vice-chancellor by April 30th. Further particulars may be had from the academic registrar at the University, South Kensington, London, S.W.

University of Aberdeen

On July 10th the following degrees and diploma were conferred:—

M.D.—*F. W. Gordon, *J. S. Robertson, E. R. Sorley (in absentia).

*With commendation.

M.B., Ch.B.—A. J. Slessor (second-class honours), R. A. Barraclough, R. P. M. Brown, W. J. Cameron, A. B. Christie, Dorothy M. Chrystall, Archibald Crerar, J. F. Croll, A. R. R. Cumming, G. I. Davidson, J. J. R. Duthie, Norman Gill, W. T. Gordon, Margaret M'N. Little, Christopher MacDonald, J. S. Mackay, Helen C. S. MacLean, A. D. Morgan, B. M. Nicol, F. J. A. Norris, C. J. Silver, D. F. Smith, T. A. Smith, J. L. Stephen, D. O. Stevenson, R. M'P. Stewart, J. L. Taylor, J. M. Thomson, A. A. White, and W. J. R. Wyness.

D.P.H.—J. G. H. Davidson.

Royal College of Surgeons of England

A quarterly meeting of the council was held on July 11th with Sir Holburt Waring, the president, in the chair. Sir Cuthbert Wallace was elected president for the ensuing year, and Mr. A. H. Burgess and Sir Charles Gordon-Watson were elected vice-presidents. Mr. W. Sampson Handley was appointed a member of the executive committee of the Imperial Cancer Research Fund. Sir Frank Colyer, was reappointed hon. curator of the odontological collection, and Mr. C. J. S. Thompson, hon. curator of the historical collection. The Hallett prize, given in connexion with the primary fellowship examination, was awarded to John Philip Bentley of King's College, London.

The following professors, lecturers, and demonstrators were appointed for the ensuing year: Hunterian Professors: Mr. A. F. MacCallan, the surgery and pathology of trachomatous conjunctivitis; Mr. F. H. Bentley, wound healing by tissue culture methods; Mr. A. M. Boyd, the peripheral circulation in occlusive and spasmodic diseases of the vessels; Mr. Arthur Bulleid, dental sepsis as a factor affecting medical and surgical procedures; Mr. H. Osmond Clarke, injuries of the carpal bones; Mr. John Gilmour, adolescent deformities of the acetabulum; Mr. G. C. Knight, intestinal strangulation; Mr. G. A. Mason, extirpation of the lung; Mr. Reginald Payne, pyogenic infections of the parotid; Mr. G. F. Rowbotham, a series of tumours of the skull; Mr. E. P. Stibbe, the anatomy and surgery of the subtentorial angle; and Dr. E. W. Twining, a radiographic study of the third ventricle. *Arris and Gale Lecturer:* Dr. John Beattie, temperature regulation. *Erasmus Wilson Lecturers:* Mr. C. E. Shattock and Mr. C. P. G. Wakeley, demonstrations on pathology; and Dr. L. W. Proger, four demonstrations on pathology. *Arnott Demonstrator:* Dr. A. J. Cave, demonstrations on the contents of the museum.

Dr. Arthur Maitland-Jones was elected an examiner for the Special Diploma in Child Health. A diploma of fellowship was granted to E. S. Allin, and a diploma of membership was granted to H. B. Hunt.

Licences and diplomas were granted jointly with the Royal College of Physicians, as follows:—

L.D.S.—R. H. C. Ballauff, E. A. Beach, R. A. Beck, M. R. Blair, E. B. Briault, Harry Caldwell, C. R. Collis, W. G. C. Dickson, D. J. Dymond, W. E. Earle, F. M. Eisenstaedt, N. L. Forrester, D. W. Friendship, P. F. B. Gillett, D. A. Godfrey, D. E. Holdway, Harry Jackson, P. F. James, O. C. Jenkins, K. A. Keith, W. C. J. King, G. C. H. Kramer, W. F. Leuner, E. B. Lloyd, S. R. Luton, A. J. May, W. J. R. C. Morgan, Edgar Nelson, A. G. Richmond, J. F. Russell, J. F. M. Sampson, E. R. L. Shrimpton, E. H. F. Webb, D. J. Wigginton, and T. J. Wood.

D.P.H.—A. A. Cunningham, W. L. Devlin, H. A. Ferguson,

W. P. Greenwood, E. T. Jones, Behari Lal, F. J. Murphy, T. H. Parkman, S. C. St. G. C. Parry, and R. W. Tannahill.

D.T.M. & H.—A. G. Biggam, E. M. Clark, H. J. Curran, O. E. Fisher, I. D. Gebbie, L. N. Goel, J. O. Gordon, G. M. Graham, G. T. Hindley, J. H. Hudson, D. C. Lahiri, J. S. McNair, P. D. Mohandirange, Théodora Papafigou, E. G. Wilkins, F. J. Wright, and L. P. Younglao.

D.P.M.—Karl Biden-Steele, S. R. Bray, A. C. Dalzell, C. C. Edwards, R. E. Hemphill, Margaret N. Jackson, D. E. Jones, T. B. Jones, W. S. Maclay, Bernard Matheson, and I. A. Senanayeke.

D.L.O.—J. W. Gerrie, Kennedy Hunter, R. V. Rao, and Robert Williamson.

University of St. Andrews

Dr. A. R. Moodie has been appointed lecturer in ophthalmology and clinical ophthalmology. Dr. A. M. MacGillivray, lecturer in clinical ophthalmology in the Medical School, Dundee, and Lieutenant-Colonel T. J. Mitchell, assistant in anatomy in the United College, St. Andrews.

University of Dublin

At recent examinations in the School of Physic, Trinity College, the following candidates were successful :—

FINAL EXAMINATION FOR M.B., B.CH., AND B.A.O.

Therapeutics and Pathology.—*E. W. L. Thompson, *J. H. A. Jewell, *J. A. Strong, *J. G. Steinbock, M. C. Wood, Max Levy, Sterling Tomlinson, J. M'C. Caldwell, Stella M. Coen, B. G. Kearon, D. J. H. Douglas, D. S. Toole, E. M'G. Cochrane, H. F. T. MacFetridge, C. H. Blackham, Maureen N. S. Mason, P. J. Mullaney, W. D. Chesney, H. J. Walker, W. E. Counihan, E. G. Fox, and Rebecca M. R. Pike.

Medicine.—B. E. O'Brien, D. P. Burkitt, G. J. Dixon, Murie E. Wallace, Maureen C. E. Gore-Grimes, J. C. Gaffney, H. J. Anderson, H. C. Bourke, Harold Pringle, Emanuel Cowan, A. E. Fannin, J. R. Kellett, N. G. Farrell, William Charney, B. M. O'Sullivan, D. J. Hayes, S. B. Sachs, J. R. M'Elroy, R. L. Oakes, J. C. Roux, J. A. Hamilton, F. J. C. Loughran, F. T. P. Bergin, G. W. M. Elliott, R. H. Pratt, R. A. Bond, P. X. O'Dwyer, and A. F. H. Keatinge.

D. G. Walker and P. St. G. Robinson.

Surgery.—J. N. P. Moore, D. G. Walker, H. J. Anderson, Muriel E. Wallace, Harold Pringle, B. E. O'Brien, G. J. Dixon, J. R. Kellett, D. P. Burkitt, Maureen C. E. Gore-Grimes, H. G. Ellerker, L. W. M'Caughey, Maurice Marmelstein, R. H. Pratt, A. D. Egan, R. H. Simon, J. R. M'Elroy, William Charney, and N. G. Farrell.

Midwifery.—S. J. H. Douglas, G. C. Retz, John M'Quillan, W. S. M'Bride, Benjamin Rogol, D. P. Harris, Neville Jackson, P. L. van Aardt, G. S. Caithness, and Eithne M. O'Connell.

D.P.H.

Part II.—D. B. Bradshaw, G. A. Miller, J. K. Lavery, and T. J. O'Sullivan.

DIPLOMA IN GYNÆCOLOGY AND OBSTETRICS

M. J. Eakin, C. F. Marks, Chan Ping In, and H. A. Shawarby.

*Passed on high marks.

National University of Ireland

At recent examinations the following candidates were successful :—

M.D.

J. P. Sheehan.

M.B., B.CH., AND B.A.O.

J. G. Barrett, John Breen, Brendan Buckley, James Burke, Jeremiah Cogan, J. P. Corcoran, R. A. Coughlan, D. C. Lawton, J. N. McCarthy, E. M. Newman, John O'Herlihy, and Thomas O'Neill.

Part I.—Vincent Bennett, P. J. Kelleher, Cornelius McGrath, Samuel Nathan, V. J. O'Sullivan, and William O'Sullivan.

Part II.—Michael Kirwan.

D.P.H.

Part I.—Elizabeth J. H. Philpott (née Harris) and R. G. Cross (with second-class honours); D. F. Burke, T. G. A. Carroll, R. A. Good, M. F. Kelleher, M. J. Kennefick, and J. P. O'Leary.

Mr. Robert Dwyer Joyce, has been appointed to the chair of ophthalmology at University College, Dublin.

Mr. Joyce was born in Dublin in 1875, and received his medical education at the universities of Dublin, Vienna, and Berlin. He qualified M.R.C.S. in 1895, and in 1899 obtained the fellowship of the Royal College of Surgeons in Ireland. He was appointed ophthalmological surgeon to the Richmond Hospital, Dublin, and was later appointed to the same position at the Mater Misericordiæ Hospital, which he still holds. He also acts as examiner in ophthalmology for the Royal College of Surgeons in Ireland. His contributions to medical journals include papers on the topography of the facial nerve in its relation to mastoid operations, and on detachment of the choroid.

Dr. D. J. Coffey, pro-vice-chancellor of the University, and president of University College, Dublin, was reappointed representative of the University on the General Medical Council for a further period of three years.

At recent examinations for the B.D.S. degree, Percy Greinson and N. L. Newman were successful.

Queen's University, Belfast

At recent examinations the following candidates were successful :—

M.D.

F. J. Booth and D. H. Smyth (with gold medals), D. H. Smyth (with commendation), Winifred E. Hadden, J. M. Houston, S. W. T. Lee, D. W. Macartney, D. M. Morrison, R. W. Mussen, J. A. Price, Lilian V. Reilly, J. M. C. Speer, Gerald Townsley, and H. B. C. Wallace.

M.B., B.CH., AND B.A.O.

W. M. Brennen, T. D. Carson, G. A. Craig, C. H. Cullen, J. S. Matthews, and J. G. Pyper (with second-class honours), S. J. Allen, Rosetta C. Barker, J. F. Beck, J. W. Burns, C. F. Campbell, J. T. Carson, T. P. Diamond, Mary R. M. Donnelly, K. I. H. Henry, James Houston, R. A. Johnston, M. C. Kelly, Martha L. Kennedy, H. J. Knox, P. A. Lee, S. E. C. Lyons, K. C. M'Keown, T. A. MacLynn, R. W. M'Namara, J. N. Macartney, H. G. Magill, N. S. Martin, J. L. E. Millen, J. K. Moffett, R. A. Monteith, R. S. Nixon, Charles Reid, J. N. W. Ritchie, J. G. Rountree, C. V. P. Ryall, A. H. Scott, R. H. F. Smith, W. M. Stewart, A. W. Thompson, Anna V. Thompson, and N. J. W. Thompson.

On July 13th, the hon. degree of LL.D. was conferred on Thomas Gillman Moorhead, M.D., regius professor of physic, Trinity College, Dublin; the hon. degree of D.Sc. on Thomas Carnwath, M.B., senior medical officer, Ministry of Health; and Major-General William Porter Macarthur, deputy director-general Army Medical Services.

The following degrees were also conferred :—

M.D.—F. J. Booth, H. G. Calwell, Winifred E. Hadden, J. M. Houston, S. W. T. Lee, D. W. Macartney, D. McV. Morrison, R. W. Mussen, J. A. Price, Lilian V. Reilly, D. H. Smyth J. M. C. Speer, G. Townsley, and H. B. C. Wallace.

University of Sheffield

At a meeting of the university council held on July 12th the resignation of Prof. M. H. Phillips of the chair of obstetrics and gynæcology was received. The following appointments were made :—

Dr. G. L. Roberts, to the chair of dental surgery; Mr. John Chisholm, to the chair of obstetrics and gynæcology; Dr. W. J. Wellwood Ferguson, hon. lecturer in ophthalmology, in succession to Dr. P. J. Hay, who has resigned; Dr. J. MacD. Croll, lecturer in bacteriology; and Dr. Edward S. Duthie, demonstrator in pathology.

Dr. Roberts graduated M.B. with second-class honours at the University of Liverpool in 1927, and in the next year he obtained the degree of B.D.S. with first-class honours. He held the position of tutor of clinical dental surgery at the University of Leeds, and was hon. demonstrator to the Leeds Dental Hospital. He returned to Liverpool as demonstrator of clinical dental surgery of its dental school, but later went to Birmingham to take up his present post as tutor of dental clinical subjects at the dental school of Birmingham University.

Mr. Chisholm was born in Inverness in 1883, and was educated at Inverness Royal Academy and Edinburgh University, where he graduated M.B. in 1905. After holding resident appointments at St. Mary's Hospital, Manchester, and the Jessop Hospital for Women, Sheffield, he joined the honorary staff of the Jessop Hospital as assistant surgeon and surgeon in charge of the venereal diseases clinic, and is now a member of the senior staff. He is hon. consulting gynæcological surgeon to the Royal Hospital, Sheffield, and lecturer in obstetrics and gynæcology in the University. During the war he held the rank of captain in the R.A.M.C. He became a fellow of the Royal College of Surgeons of Edinburgh in 1920.

Mr. H. C. Malleson, of Guy's Hospital, was appointed an external examiner for the Ph.D. degree.

University of Durham

Dr. E. Farquhar Murray has been appointed professor of midwifery and gynæcology in succession to Prof. R. P. Ranken Lyle.

Dr. Murray is a son of the late Mr. Robert Murray, of Dundee, and a brother of the late Prof. Leith Murray. He received his medical education at St. Andrews, St. Bartholomew's Hospital, Paris, Dublin, and Munich. He qualified M.B. with honours at St. Andrews in 1908 and M.D. in 1911, afterwards going to London, where he held resident appointments at the Chelsea Hospital for Women and Queen Charlotte's Hospital. At the outbreak of war he joined the R.N.V.R. and served as a surgeon-lieutenant, being mentioned in dispatches for distinguished services. In 1918 he obtained the fellowship of the Royal College of Surgeons of England, and after demobilisation was appointed to the staff of the Newcastle Maternity Hospital as assistant. In 1920 he joined the staff of the Royal Victoria Infirmary where he later became hon. gynæcologist, and in the same year he was appointed lecturer in midwifery and gynæcology at the University of Durham College of Medicine. He is a foundation member and fellow of the British College of Obstetrics and Gynæcology and has published papers on radium in treatment of cancer of cervix and menorrhagia, puerperal sepsis, and investigations of tubal abnormalities.

Dr. W. Fletcher Shaw, professor of clinical obstetrics and gynæcology in the Victoria University of Manchester, has been elected an honorary fellow of the American Gynæcological Society.

Welsh National School of Medicine

Dr. L. H. Howells has been appointed demonstrator in the department of materia medica and pharmacology, and Dr. J. D. Spillane, junior assistant in the medical unit.

Egyptian University, Cairo

Dr. F. H. Smirk has been appointed to the chair of pharmacology in the University. Dr. Smirk, who graduated at Manchester in 1925, at present holds a Beit memorial fellowship and is assistant to the pharmacological department of University College Hospital.

St. Mary's Hospital Medical School

The annual dinner of past and present students of this school will be held at Claridge's Restaurant on Saturday, Sept. 28th, at 7.30 P.M. Mr. Duncan C. L. Fitzwilliam will be in the chair. The hon. secretary is Dr. A. Hope Gosse.

The post-graduate course, which is open to all medical practitioners without fee, will take place on Sept. 27th, 28th, and 29th.

Society for Relief of Widows and Orphans of Medical Men

The quarterly meeting of the directors of this Society was held on July 3rd with Dr. R. A. Young in the chair. One new member was elected and the deaths of three members including Dr. W. Culver James, senior vice-president of the Society were reported. Dr. James was elected a member in 1882 and always took a great interest in the work of the Society. The sum of £2258 was voted for the payment of the half-yearly grants to the 54 widows and 11 orphans in receipt of relief. Three widows of deceased members applied for relief; one who was 71 years of age was voted a yearly grant of £75 and the other two, a yearly grant of £60. Relief is granted only to the necessitous widows and orphans of deceased members. Membership of the Society is open to registered medical men, who at the time of their election are resident within a 20-mile radius of Charing Cross. Full particulars may be obtained from the secretary 11, Chandos Street, London, W.1.

British College of Obstetricians and Gynæcologists

At the quarterly meeting of the council held on July 13th Sir Ewen Maclean was elected president. Dr. H. Russell Andrews and Dr. Bethel Solomons were elected vice-presidents; Mr. Eardley Holland was re-elected hon. treasurer; Sir Gomyns Berkeley hon. appeal treasurer; Prof. Fletcher Shaw hon. secretary; Mr. Frederick Roques hon. librarian.

The following were elected to the membership:—

H. G. E. Arthure (London), Narendranath Basu (Calcutta), J. R. S. G. Beard (Adelaide), Bernard Berger (Bloemfontein), James Black (Johannesburg), Margaret G. Bott (Nottingham), Joyn H. Boyd (New York), R. B. Charlton (Brisbane), G. A. Cook (Melbourne), W. G. Cosbie (Toronto), A. J. Cunningham (New South Wales), Constance E. D'Arcy (Sydney), G. A. Davies (Sheffield), L. L. Davey (Adelaide), H. D. De Sa (Bombay), K. C. Donovan (Sydney), M. H. Elliot-Smith (Brisbane), Tom Farranbridge (Sydney), H. M. Fisher (Toorak), G. P. Fitzgerald (Dunedin), M. B. Frazer and R. I. Furber (Sydney), F. J. Hayden, W. I. Hayes and A. M. Hill (Melbourne), A. F. Hobson (Sydney), J. S. Hovell (Khartoum), T. D. Hughes (Sydney), H. S. Jacobs (Melbourne), J. Jhirad (Bombay), J. L. Jona (Melbourne), Alice M. Kenny (London), H. M. Lazarus (Madras), D. M. Low (Toronto), G. B. Lowe (New South Wales), H. I. McClure (Belfast), R. E. Magarey (Adelaide), B. T. Mayes (Brisbane), A. A. Moon and E. L. Newman (Sydney), L. B. Patrick (Sheffield), Hemendranarayan Ray (Calcutta), T. G. Robinson (Epsom), W. D. Saltau (Melbourne), Ida B. Saunders (Sydney), J. A. H. Sherwin (Melbourne), George Simpson (Victoria), T. H. Small (New South Wales), G. R. Sparrow (Toronto), G. R. Stoneham (New Zealand), Jane B. Stubbs (Manchester), W. E. C. Thomas (Ashton-under-Lyne), R. S. Townsend (Lucknow), H. B. Van Wyck (Toronto), Ramsay Warden (Melbourne), James Waterman (Port of Spain), Keith Vartan (London), and H. B. Williams (Sydney).

The following were admitted by the president:—

Fellows.—*L. C. Conn (Edmonton, Alberta), Amy M. Fleming and V. J. F. Lack (London), *W. C. Spackman (Bombay), and Leslie Williams (London).

Members.—M. D. Black (Glasgow), *Ebenezer Maduram (Madras), and Joyce Morgan (London).

* In absentia.

University of Manchester

Messrs. Boots Pure Drug Company, Limited, have made a grant of £300 per annum for three years for the provision of scholarships or technical assistance in the department of clinical investigations and research.

The following appointments are announced: Dr. Norman Kletz, lecturer in clinical medicine; Dr. William Brockbank, lecturer in medicine for dental surgery; Dr. D. H. Mackay and Dr. E. L. Patterson, demonstrators in anatomy; Dr. C. S. D. Don, demonstrator in systematic medicine; and Dr. Walter Schlapp, tutor and secretary to the faculty of medicine.

Leverhulme Research Fellowships

Leverhulme research fellowships have been awarded to Dr. D. B. Blacklock, professor of tropical medicine in the University of Liverpool; Dr. M. G. Blacklock, curator of the museum, Liverpool School of Tropical Medicine.

A grant in aid of research has been made to Dr. J. W. W. Stephens, F.R.S., emeritus professor of tropical medicine in the University of Liverpool. Application forms and further information may be obtained from the secretary, Leverhulme Research Fellowships, Union House, St. Martins-le-Grand, London, E.C.1.

The International Congress on Life Assurance Medicine

This congress meets in London next week, under the presidency of Sir Walter Langdon-Brown, at the offices of the Prudential Assurance Company, Holborn Bars, E.C. The meetings begin on Tuesday, and particulars may be had from the hon. secretary, Dr. Otto May.

In connexion with the congress an exhibition dealing with health service and life assurance, organised by Dr. Neustatter, of Berlin, is being held at the Prudential offices. Any medical men interested in the subject will be welcome on Tuesday, July 23rd, from 10 A.M. to 5 P.M., upon presentation of their visiting card.

London Hospital

Presenting his twenty-fifth annual report as dean of the medical college on July 11th. Prof. William Wright spoke of the additions of the last quarter of a century, including a dental school a clinical theatre, a cardiac institute, a residents' hostel, and a students' hostel. Seven new separate departments had been created, and six professorial chairs; funds of upwards of £100,000 had been accumulated for the advancement of medical research; ten members of the staff had been elected fellows of the Royal Society; while 1800 students had obtained a first medical qualification, and 300 a second or higher qualification such as F.R.C.S. or M.R.C.P. In reviewing the year, Prof. Wright mentioned the appointment of Dr. A. Burrows as assistant physician in the skin department, and Dr. J. R. Marrack to the new chair in chemical pathology. The various departments of clinical pathology have been combined under the directorship of Dr. P. N. Panton, and a neurological department has been established under Dr. George Riddoch and Dr. W. Russell Brain. Dr. J. Davidson and Dr. N. M. Goodman have been appointed lecturers in forensic medicine and public health respectively, while Dr. S. P. Meadows, Mr. H. E. Harding, and Mr. H. S. Morton have joined the staff as first assistants in the neurological, surgical, and obstetric departments. Dr. A. E. Clark-Kennedy has accepted the newly constituted office of sub-dean. The students' hostel, Prof. Wright reported, has admirably fulfilled its purpose, but unfortunately still carries a debt of £15,000. As for the entry of students, it was higher last year than at any time since 1918–19.

Presenting the prizes to the students, Mr. John Masefield, O.M., the Poet Laureate, expressed his distaste for the phrase "a healthy mind in a healthy body." "We have gone far beyond such things in these days," he said. "I feel that what both the writers and the men of science want is to have a delightful and a delighted mind in a delighted and delightful body." This goal would be brought nearer, he felt, if the direction of affairs were entrusted more to scientists and less to the haphazard demagogue. Sir William Goschen proposed a vote of thanks to Mr. Masefield, and this was seconded by Mr. Eardley Holland.

University of Oxford

It is announced that Lord Nuffield's gift for the equipment of the new institute of medical research (described in our issue of May 25th) will be £16,000. As already stated, Lord Nuffield has also made the Radcliffe Observatory building, and surrounding land, available for medical research.

General Board of Control for Scotland

Dr. Kate Fraser has been appointed commissioner of the General Board of Control for Scotland in place of Dr. H. C. Marr, who is retiring. Dr. Fraser holds at present the position of departmental commissioner under the Board.

Naval Medical Compassionate Fund

At the quarterly meeting of the directors of this fund, held on July 12th, with Surgeon Vice-Admiral R. W. B. Hall, medical director-general of the Navy, in the chair, the sum of £70 was distributed to applicants.

Medical Society of Individual Psychology

At the annual general meeting of this society on July 11th the following were elected officers and members of committee for next session: chairman, Dr. M. Bevan-Brown; vice-chairman, Sir Walter Langdon-Brown; treasurer, Dr. H. C. Squires; editor (if available), Dr. J. C. Young; secretary, Dr. Alexander Baldie; members of committee, Dr. Beattie, Dr. Taylor, Dr. Joyce Partridge, and Dr. Woodcock.

Imperial Social Hygiene Congress

The dinner given by the British Social Hygiene Council at the May Fair Hotel on July 11th celebrated the success of the seventh Imperial Social Hygiene Congress (reported on another page). Proposing the toast of Health and Education in the Empire, Prof. Winifred Cullis spoke particularly of the council's efforts to spread the teaching of biology and to apply it to the problems of life. The teaching of science would not make people perfect; biologists were not perfect themselves. But Prof. Cullis believed that it was a basis on which a better and fuller life could be built—provided always there was a conscience, and spiritual values, in the background. Replying to the toast, Dr. Arthur MacNalty, chief medical officer of the Ministry of Health and the Board of Education, referred to the international and imperial implications of public health work and of the Ministry's keen coöperation with the League of Nations Health Organisation in combating disease throughout the world. He paid a tribute to Mrs. Neville-Rolfe, secretary-general of the council, for her undiscouragable spirit in forwarding the work. Sir Francis Fremantle briefly proposed the Guests, guiding his hearers skilfully through posses of distinguished representatives of ministries and public health services. Sir Bede Clifford, governor of the Bahamas, in responding, regretted that half the Empire should not know where the other half was, and welcomed the Imperial Congress as a means of exchanging information and ideas. The Colonial Empire, he said, would hardly exist to-day but for the labours of medical men like Sir Patrick Manson, and their successors were doing invaluable work and making observations which ought to be better known. As an example of a small but possibly useful fact he mentioned that it had recently been noticed in the Bahamas that pellagra increased in years when hurricanes had destroyed the citrus fruits. In conclusion, Sir Bede referred to some of the problems of quarantine arising in an island situated only 200 miles from the American coast and linked with it by daily air services. Miss Florence Horsbrugh, M.P., also spoke of the value of the congress in informing public opinion. As a representative of Great Britain at Geneva she had learnt the necessity of the public understanding something of the problems that mattered most to mankind. There was far more talk about road accidents, for instance, than about health or housing. Replying to his health, proposed by Lieut.-Colonel Sandeman Allen, M.P., Sir Basil Blackett, the president, said that the council spread its net wide and was much in earnest. He recommended Government departments to do whatever Mrs. Neville-Rolfe told them.

Caledonian Medical Society

The annual dinner of this society was held at Bamburgh on June 28th under the presidency of Dr. James McDonald, of Belford, Northumberland.

Royal Hospital for Incurables, Putney

The Duchess of York will visit this institution on July 24th to open a new nurses' home which has been erected at a cost of £25,000. She will receive purses towards meeting this extra expenditure.

Warde-Aldham Hospital, South Elmsall

Lord Moynihan has opened a new X ray department and massage and theatre block at this hospital, which exists chiefly for the benefit of miners.

Western General Hospital, Edinburgh

Preliminary plans for the modernisation of this institution—one of the chain now run by the city—at an estimated cost of £120,000 are being considered. The nurses at present live in a block in the hospital, but it is proposed to build a new home a short distance away where they can live in pleasant surroundings.

Appointments

BENN, E. C., M.B. Liverp., has been appointed Medical Superintendent of the Leeds City Hospitals, Seacroft.

BOLAND, E. R., F.R.C.P. Lond., D.P.H., Assistant Physician to the Hospital of St. John and St. Elizabeth, London.

DOUGLAS, J. B., M.B. St. And., D.M.R.E., Radiologist to the Bethlem Royal Hospital, London.

GILPIN, ARCHIBALD, M.D., M.R.C.P. Lond., Assistant Physician to King College Hospital.

HAWKSLEY, J. C., M.D., M.R.C.P. Lond., Hon. Assistant Physician to University College Hospital.

HAYES, E. D. T., M.D. Dub., D.P.M., medical superintendent at the Northampton County Mental Hospital.

HERON, J. P., M.B., F.R.C.S. Edin., Resident Medical and Surgical Officer and Registrar at the Royal Albert Edward Infirmary, Wigan.

HOYLE, J. CLIFFORD, M.D., M.R.C.P. Lond., Assistant Physician to the Hospital for Consumption, Brompton.

JOHNSON, WILLIAM, M.D., F.R.C.P. Lond., Hon. Physician to the Royal Liverpool Children's Hospital.

MUSHIN, WOOLF, M.B. Lond., Hon. Assistant Anæsthetist at the Central London Throat, Nose, and Ear Hospital.

PEEL, J. H., B.M. Oxon., F.R.C.S. Eng., M.C.O.G., Registrar to the Samaritan Free Hospital for Women, London.

PLAYFAIR, PATRICK, M.B. Camb., F.R.C.S. Eng., Registrar at Queen Charlotte's Maternity Hospital, London.

PLUMMER, N. S., M.D., M.R.C.P. Lond., Assistant Physician to the Charing Cross Hospital.

RICH, W. M., L.R.C.P. Lond., Resident Medical Officer at the Keighley and District Victoria Hospital.

TAYLOR, A. B., M.D. Birm., M.R.C.P. Lond., First Assistant Medical Officer at the King Edward VII. Sanatorium, Midhurst.

THOMAS, E. W. P., M.B. Camb., Hon. Registrar to the Skin Department at St. Thomas's Hospital.

TROUP, JAMES, M.B. Manch., F.R.C.S. Edin., Hon. Surgeon in Ordinary to the Royal Hampshire County Hospital, Winchester.

Medical Referee under the Workmen's Compensation Act, 1925: For the Bury, Rochdale, Oldham, Salford (Circuit No. 5), and Manchester (Circuit No. 8) County Court Districts. Applications should reach the Private Secretary, Home Office, Whitehall, London, S.W.1, before August 3rd.

Vacancies

For further information refer to the advertisement columns

Accrington Borough.—M.O.H. £800.
Bedford County Hospital.—Second H.S. At rate of £150.
Benenden, Kent, National Sanatorium.—H.P. At rate of £75.
Birmingham Children's Hospital.—Res. Surg. O. £175. Also H.P., H.S., and Cas. H.S. Each at rate of £75.
Birmingham City Education Committee.—Asst. School M.O. £500.
Birmingham, Dudley-road Hospital.—Jun. M.O. At rate of £200.
Birmingham, Little Bromwich Hospital for Infectious Diseases.—Sen. Asst. M.O. £750.
Birmingham, West Heath Sanatorium.—Res. Asst. M.O. At rate of £250.
Birmingham and Midland Eye Hospital.—H.S. At rate of £130.
Bolton Royal Infirmary.—H.S. £125.
Bradford Royal Infirmary.—H.S. At rate of £135.
Brighton, Sussex Maternity and Women's Hospital.—Res. H.S. £130.
Buxton, Devonshire Hospital. H.P. Also Asst. H.P. At rate of £200 and £150 respectively.
Cambridgeshire County Council.—Asst. County M.O. £500.

Canterbury, Kent and Canterbury Hospital.—2 H.S.'s. Each at rate of £125.
Cardiff, King Edward VII. Welsh National Memorial Association.—Asst. Res. M.O. for South Wales Sanatorium. £200.
Chester, East Lancashire Tuberculosis Colony, Barrowmore Hall.—H.P. At rate of £150.
City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E.—H.P. At rate of £100.
Derbyshire Hospital for Sick Children.—Res. H.S. At rate of £130.
Doncaster Royal Infirmary.—H.S. to Eye and Ear, Nose, and Throat Depts. £175.
Dreadnought Hospital, Greenwich, S.E.—H.S. At rate of £110.
Ealing, King Edward Memorial Hospital.—Jun. Res. M.O. At rate of £150.
Eastbourne, Princess Alice Hospital.—Res. H.S. £150.
Evelina Hospital for Sick Children, Southwark, S.E.—H.S. At rate of £120.
General Lying-in Hospital, York Road, Lambeth, S.E.—Jun. Res. M.O. and Anæsthetist. At rate of £100.
Golden-square Throat, Nose and Ear Hospital, Nr. Piccadilly-circus.—Anæsthetist. £150.
Grimsby and District Hospital.—Sen. and Junr. H.S. £200 and £150 respectively.
Harrogate Royal Bath Hospital.—Res. M.O. £156.
Ilkley, Middleton-in-Wharfedale Sanatorium.—Sen. Asst. M.O. £450.
Ipswich, East Suffolk and Ipswich Hospital.—H.P. and H.S. Each £120.
Jersey General Hospital and Poor Law Infirmary.—Asst. Res. M.O. At rate of £150.
Kingston-upon-Hull, Beverley-road Institution.—Two Asst. M.O.'s. Each £350.
Lancaster Royal Infirmary.—Jun. H.S. At rate of £130.
Leigh Infirmary, Lancs.—Sen. Res. H.S. Also Jun. H.S. At rate of £175 and £150 respectively.
Liverpool, Bootle General Hospital.—H.P. Two H.S.'s. Also Cas. O. Each at rate of £150.
Liverpool, Broadgreen Sanatorium.—Res. Asst. M.O. £200.
London Homœopathic Hospital, Great Ormond-street, W.C.—Gynæcological H.S. At rate of £100.
Macclesfield General Infirmary.—Second H.S. At rate of £150.
Manchester, Ancoats Hospital.—H.S. At rate of £100. Also Orthopædic H.S. At rate of £100.
Manchester, Christie Hospital and Holt Radium Institute, Withington.—Asst. Radium Reg. £400.
Manchester Ear Hospital, Grosvenor-square, All Saints.—H.S. At rate of £150.
Manchester Northern Hospital, Chatham Hill-road.—Hon. Pathologist. £100. Also Bio-Chemist for Pathological Dept. £120.
Manchester and Salford Hospital for Skin Diseases.—H.S. At rate of £150.
Metropolitan Hospital, Kingsland-road, E.—Res. Cas. O. £100.
Middlesbrough, North Riding Infirmary.—Third H.S. and Cas. O. At rate of £125 and £150 respectively.
Miller General Hospital, Greenwich-road, S.E.—Anæsthetist. 52 guineas.
Newcastle, Throat, Nose and Ear Hospital, Rye Hill.—H.S. £100.
Northampton County Mental Hospital, Berrywood.—Deputy Med. Supt. £550.
Norwich, Jenny Lind Hospital for Children.—Res. M.O. £120.
Nottingham General Hospital.—H.S. for Ear, Nose, and Throat Dept. At rate of £150.
Oswestry, Robert Jones and Agnes Hunt Orthopædic Hospital.—H.S. At rate of £200.
Portsmouth City.—Tuber. O. and Sen. Asst. M.O.H. £750. Also Asst. M.O.H. and First Res. Med. Asst. £600–£750. Also Asst. M.O.H. and Second Res. Med. Asst. £500–£700.
Princess Beatrice Hospital, Earl's Court, S.W.—Hon. Clin. Asst.
Putney Hospital, Lower Common, S.W.—Res. M. and Cas. O. At rate of £100.
Queen's Hospital for Children, Hackney-road, E.—H.S. and Cas. O. Each at rate of £100. Also Sen. Res. M.O. At rate of £200.
Reading, Royal Berkshire Hospital.—Cas. O. Also H.S. Each at rate of £125.
Rochdale Infirmary and Dispensary.—Jun. H.S. £200.
Romford, Essex, Oldchurch Hospital.—Pathologist and Asst. M.O. £600.
Royal National Orthopædic Hospital, 234, Great Portland-street, W.—Two H.S.'s. for Country Branch. Each at rate of £150.
Royal Naval Medical Service.—Nine M.O.'s.
Royal Northern Hospital, Holloway, N.—Two Clin. Assts.
St. Thomas's Hospital.—M.O. in charge of Physio-Therapeutic Dept.
Sheffield, Children's Hospital.—H.S. At rate of £100.
Sheffield Royal Hospital.—Two Res. Asst. Cas. O.'s. Also Res. Anæsthetist and Holiday Locum. Each at rate of £80.
Sheffield, Royal Infirmary.—Ophth. H.S. At rate of £120. Also H.S. and H.P. Each at rate of £80.
Stockport Infirmary. Hon. Ophth. Surgeon.
Stoke-on-Trent, Longton Hospital.—H.S. £160.
Swansea General and Eye Hospital.—Cas. O. At rate of £150 to £175.
West Bromwich, Hallam Hospital.—Res. H.P. At rate of £200.
Westminster Hospital, Broad Sanctuary, S.W.—Wander Scholar (Clin. Path. and Reg. to Children's Dept.). £250.
Wigan, Royal Albert Edward Infirmary and Dispensary.—H.S. At rate of £150.
Willesden General Hospital, Harlesden-road, N.W.—Res. Cas. O. At rate of £100.
Wolverhampton Royal Hospital.—H.S. for Fracture and Orthopædic Dept. At rate of £100.
Worcester Royal Infirmary.—H.P. Also Jun. H.S. At rate of £160 and £120 respectively.
Worksop, Victoria Hospital.—Sen. H.S. At rate of £150.

Births, Marriages, and Deaths

BIRTHS

BROADBENT.—On July 6th, at Queen's-gardens, W., the wife of Hubert Broadbent, M.R.C.S., of a daughter.
EVANS.—On July 7th, at Edmonton, London, the wife of P. F. Evans, M.R.C.S., of a son.
GRAVES.—On July 8th, at Devonshire-street, W, the wife of Dr. T. C. Graves, of Birmingham, of a daughter.
GREAVES.—On July 13th, at Dumfries, the wife of Surg.-Lt. W. Greaves, R.N., of twins (son and daughter).
MACKINTOSH.—On July 9th, the wife of Dr. Ian Mackintosh, Whitwell, Hitchin, of a son.
MCBRIEN.—On July 4th, at Maidstone, Kent, the wife of L. P. McBrien, M.R.C.S., of twins (son and daughter).
POTTS.—On July 6th, at Salisbury, the wife of J. L. Potts, B.Chir., of a daughter.
WILLIAMS.—On July 5th, at Sutton, Surrey, the wife of L. G. Williams, M.R.C.S., of a son.
WRAITH.—On July 15th, 1935, to Jessie Evelyne Sheret, M.B., B.S., D.M.R.E., wife of F. Wraith, M.B., Ch.B., Foots Cray, Lymm, Cheshire—a son.

MARRIAGES

BEDFORD—NORTH.—On July 13th, Davis Evan Bedford, F.R.C.P., to Audrey Selina North, eldest daughter of Mr. and Mrs. Milton Ely, of Sutton, Surrey.
CHAPPEL—HOVEY-RHODES.—On July 6th, at Bowdon Downs Church, H. M. Chappel, B.Chir., to Margaret Sylvia Hovey-Rhodes.
CONNELL—STANNUS.—On July 6th, at Windsor, Arthur Blackall Connell, M.D., to Edris Stannus (Ninette de Valois).
CRAIG—MACLEAY.—On June 29th, at Singapore, Major Walter James Fairlie Craig, R.A.M.C., to Anita Esther Lloyd MacLeay.
MAGNUS—AIKEN.—On July 13th, at St. Andrew's Church, Hampstead, Dr. H. A. Magnus, of St. Bartholomew's Hospital, London, to Kathleen Aiken, of Belfast, North Ireland.
SMITH—JENNINGS.—On July 4th, at Rydal Church, Charles Edwin Smith, M.R.C.S., Ambleside, to Violet Jennings.

DEATHS

BIRD.—On June 22nd, at Quetta, from earthquake injuries, Major Joseph Godfrey Bird, I.M.S., aged 45 years.
CAMPBELL.—On July 4th, Henry Johnstone Campbell, F.R.C.P., J.P., of Dartmouth, formerly of Bradford, Yorks, aged 76.
CRAIG.—On July 3rd, at Kirkcudbright, Surg. Capt. John W. Craig, R.N. (ret.), aged 63.
CRAWFORD.—On July 1st, at Edinburgh, John Crawford, M.D., Tayvallich, Argyll, late M.O.H. of County of Zetland.
DAY.—On July 12th, at Colchester, William Leigh Maule Day, M.D., in his 59th year.
FIELD.—On July 3rd, at North Wallington, Surrey, George Hammond Field, M.B.
GRACE.—On July 5th, Nathaniel Grace, M.D., of Tunbridge Wells, aged 65.
HEATHCOTE.—On July 6th, Henry Charles Heathcote, M.B., Bath, aged 64.
HUGHES.—On July 7th, after long illness, at Sydney, Samuel Henry Hughes, F.R.C.S., aged 71.
MANDERS.—On July 5th, at Chesham Bois, Lieut.-Colonel Horace Manders, F.R.C.S., in his 83rd year.
MYLES.—On July 14th, at Folkestone, Edmond Henry Myles, Major R.A.M.C. (ret.), in his 79th year.
PEACHEY.—On July 7th, at Barnes, George C. Peachey, L.R.C.P.
RALSTON.—On June 24th, in Johannesburg, Robert Gow Ralston, F.R.C.S., aged 62.
REYNOLDS.—On July 2nd, at High Wycombe, Lewis William Reynolds, M.R.C.S., J.P., aged 79.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, July 22nd, to SATURDAY, July 27th.—BLACKFRIARS SKIN HOSPITAL, Blackfriars-road, S.E., afternoon course in dermatology. ALL SAINTS' HOSPITAL, Austral-street, S.E., course in urology.—Courses and clinics arranged by the Fellowship are open only to members and associates.

HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale, W.
THURSDAY, July 25th.—3 P.M., Dr. Blake Pritchard: Clinical Demonstration.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, July 25th.—2 P.M., Dr. D. Bateman: Methods of Testing for Asthma. 3 P.M., Dr. A. Signy: Pathological Demonstration.
Out-Patient Clinics daily at 10 A.M. and ward visits (except Wednesday) at 2 P.M.

INTERNATIONAL CONGRESS ON LIFE ASSURANCE MEDICINE.
WEDNESDAY, July 24th to July 26th.—Congress at the offices of The Prudential Assurance Company (142, Holborn-bars, E.C.).

NOTES, COMMENTS, AND ABSTRACTS

DIMENSIONS OF SICK WARDS

THE dimensions of sick wards to be erected in the future at general hospitals under the management of the L.C.C. are being standardised. In submitting proposals to this end to the Council, the general purposes committee state that experience has proved that the comfort and well-being of the patient, and his efficient treatment, should be the determining factors in deciding the dimensions of a ward, and that if these be adequately provided for all other considerations and all theoretical formulæ can be disregarded The proposals made relate solely to the normal type of ward in which the beds are placed at right angles to the side walls. The experience of wards in which the beds are parallel to the side walls is not sufficient to warrant the laying down of standards.

The dimensions recommended are as follows:—

That the standard width for all types of wards to be erected in the future at general hospitals be 26 feet and that the other dimensions of the wards be as follows: (i) *acute wards*, including maternity, tuberculosis, venereal diseases, and acute mental wards—wall space per bed, 8 feet; height, 11 feet up to a length of 50 feet and 12 feet when the length exceeds 50 feet; (ii) *chronic wards*—wall space per bed, normally 7 feet, but when offensive cases are treated in the ward, 8 feet; height, as for acute wards; (iii) *cot wards*—wall space per bed, 7 feet; height, as for acute wards; (iv) *single-bedded wards*—to be not less than 11 feet by 10 feet and the height to be 10 feet or in conformity with the general plan.

Subject to certain reservations, these standards will be applied to existing wards as soon as the position with regard to accommodation makes it practicable.

The proposals for the acute wards give a floor space of 104 square feet for each patient, and a cubic capacity of 1144 cubic feet per patient. This cubic capacity is less than was formerly considered desirable because in the past great importance was attached to height of wards as providing additional air space, and lofty wards up to 16 feet in height were the rule, generally with quite inadequate window space. It is now known that any increase in the height above 12 feet does little or nothing to improve the condition of the air, and that satisfactory ventilation depends on adequate window space and its proper use. It is, therefore, considered possible to reduce the height of wards as compared with the old standards without detriment to their condition or appearance, and with considerable saving in building costs. No ruling for length of ward is laid down, but the committee state that it is improbable that unbroken wards as long as 100 feet will ever again be constructed.

BIG-GAME PHOTOGRAPHY

IT is refreshing sometimes to be transported from a common-place world to one where not only success in enterprise but actual survival depends on exceptional physical fitness and a reaction time quicker than the normal. Mr. Cherry Kearton[1] has had exciting adventures with animals and men to which his fascinating photographs bear witness, and has many tales to tell. One of his objects in describing and picturing his adventures is to encourage the big-game hunter of the future to substitute the camera for the rifle, and to this end a less constant insistance on the perils of the jungle and coast would have been more effective. Those who read of the frequent occasions on which Mr. Kearton narrowly escaped falling from the top of a cliff on to sea-washed rocks or avoided savage attack from his camera subjects may find it difficult to understand why he should rate the preservation of his life so much lower than the preservation of his negatives. They may even decide, realising the extent to which the photographer must needs rely upon his good fortune, that they will not risk emulating his experiences without providing themselves with a serviceable rifle. But with all endeavour to preserve animal types we have deep sympathy; the safety of society demands their removal in many places, but biological research would certainly suffer from their extermination.

[1] Adventures with Animals and Men. London: Longmans, Green and Co., Ltd. 1935. Pp. 292. 12*s*. 6*d*.

SOME METHODS OF HEALTH EDUCATION[1]

A LITTLE book intended for school-teachers should prove useful to all those who are concerned with health propaganda. Its object is not to teach hygiene but to suggest how to inculcate good habits, instil knowledge, and promote a right attitude to personal and communal problems of health. The titles of the four chapters indicate the line of approach: The Aims and Values of Health Education, the Content of the Health Education Course, School Methods and the Gaining of Health Knowledge, and Teaching Aids in Health Education. There are 27 illustrations giving point to the text. If it can be assumed that teachers have themselves the right kind of knowledge, it would be difficult to find a better presentation of the way in which it should be applied. Where the authors refer to points in hygiene they are nearly always accurate. The book can be commended to education authorities and bodies responsible for the training of such officers as health visitors.

WOMEN OVER FORTY

A SIMPLE, friendly book has been written by an American author[2] for women who have reached the traditionally dispiriting age of 40, after which, they are urged to believe, they may embark on the "golden years" of their lives. The book contains nothing that is new or informative for the medical reader; but it may well prove serviceable for recommendation to women patients who evince the psychological and physical difficulties of the menopause in a pronounced form.

THE "ALBATROSS"[3]

THIS pious biography by a grandson introduces us to the interesting personality of a Newfoundland doctor, still living, who has carried on a large practice for many years mainly by visits across the sea in his own yacht, the "Albatross." It is an interesting little story of personal courage, energy and resource, and we agree with Mr. Fitz-Gerald that when the hero of the book dies he will leave behind him a long record of service to his fellow-men.

SUN-BATHING

APPROPRIATE to the season is a little brochure[4] by Mr. I. O. Evans on sun-bathing, both "ordinary" and what the author is pleased to call "complete." It deals with practical and psychological problems of nudism, and gives a bibliography, a list of sun-bathing organisations, and of the seaside resorts which permit men to bathe in slips or trunks.

[1] Some Methods of Health Education. By M. B. Davies, Lecturer in Hygiene at the North Wales Training College, Bangor; and L. Wilkes, M.A., Lecturer in Education at the North Wales Training College, Bangor. London: Longmans, Green and Co., Ltd. 1935. Pp. 111. 2*s*. 6*d*.

[2] Women Over Forty. By Sarah Trent. London: G. Duckworth and Co., Ltd. 1935. Pp. 208. 3*s*. 6*d*.

[3] The "Albatross": being the Biography of Conrad Fitz-Gerald, M.R.C.S., L.S.A., 1847–1933. Written by Conrad Trelawney Fitz-Gerald, Junr. Bristol: J. W. Arrowsmith Ltd. Pp. 208. 8*s*.

[4] Sensible Sun-Bathing. By I. O. Evans. London: T. Werner Laurie Ltd. 1935. Pp. 48. 1*s*.

ROYAL EYE HOSPITAL, SOUTHWARK.—The attendances at the out-patient department of this hospital during the last year have much increased, and the rebuilding schemes are to be carried out as quickly as possible.